User Guide

VGN-S series / VGN-T series

SONY

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Read this first

Notice

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Sony Corporation reserves the right to make any modification to this manual or the information contained herein at any time without notice. The software described herein is governed by the terms of a separate user licence agreement.

Please note that the illustrations in this manual may not necessarily apply to your model. Please see the printed Specifications sheet for the specific configuration of your VAIO computer.

ENERGY STAR

As an ENERGY STAR Partner, Sony has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

The International ENERGY STAR Office Equipment Program is an international program that promotes energy saving through the use of computers and their office equipment. The program backs the development and dissemination of products with functions that effectively reduce energy consumption. It is an open system in which business proprietors can participate voluntarily. The targeted products are office equipment such as computers, displays, printers, facsimiles and copiers. Their standards and logos are uniform among participating nations.

ENERGY STAR is a U.S. registered mark.

Owner's record

The serial number, model number and product code are located on the bottom of your Sony computer. Record the numbers and refer to them if you call VAIO-Link. See also the printed **Specifications** sheet.

Welcome

Congratulations on purchasing a Sony VAIO computer. Sony has combined leading-edge technology in audio, video, computing and communications to provide you with state-of-the-art personal computing.

Here are the main features you can enjoy:

- **Exceptional performance**.
- **Portability** – The rechargeable battery pack provides hours of use without AC power.
- **Sony audio and video quality** – A high-resolution LCD screen enables you to take advantage of today's advanced multimedia applications, games, and entertainment software.
- **Multimedia features** – Enjoy audio and video CDs/DVDs.
- **Interconnectivity** – Your computer has Ethernet, Hi-Speed USB (USB2.0) and i.LINK functionalities. i.LINK is a bidirectional digital interface for exchanging data. With the Memory Stick you can easily exchange and share digital data with compatible products.
- **Wireless technology** – Thanks to the Bluetooth* and the Wireless LAN (IEEE 802.11b/g) technology, you can communicate freely, without cables or wires.
- **Windows** – Your system includes Microsoft's Windows XP Professional with Service Pack 2 operating system.
- **Communications** – Access popular online services, send and receive e-mails, browse the Internet.
- **Excellent customer support** – If you are experiencing any problems with your computer, please check the VAIO-Link website for a possible solution:

  http://www.vaio-link.com

  Before contacting VAIO-Link, please try to solve the problem by reading this guide, the printed **Troubleshooting Guide**, or the manuals and help files for the peripherals or software.

Documentation pack

Your documentation pack contains printed information and user guides to read on your VAIO computer.

Guides are provided in PDF format, which you can easily browse through and print out.

The **My Info Centre** portal is a perfect starting point to using your VAIO computer - a comprehensive collection of everything you need to get the most from your computer.

The user guides are collected under **My Documentation**, which can be shown as follows:

1 Go to **Start** and click the **My Info Centre** icon* .

2 From the pictures at the top of the window click **My Documentation** .

3 Select your language from the drop-down box.

4 Select the guide you want to read.

* The **My Info Centre** icon is only visible after you have performed the **Prepare your VAIO** setup. The **My Info Centre** icon is also available in **Start/All Programs** and can be used before you have performed the **Prepare your VAIO** setup.

You can manually browse to the user guides by going to **My Computer** > **VAIO (C:)** (your C drive) > **My Documentation** > **Documentation** and opening the folder for your language.

You may have a separate disc for the documentation of bundled accessories.

Printed documentation

- A **Specifications** sheet, containing a table of specifications, a list of bundled software, an overview of all connectors and, on the reverse side, a guide to setting up your VAIO computer.
- **Troubleshooting Guide**, where you will find solutions to common problems.
- **Recovery Guide**, where you will find an explanation of how to recover your computer's system if you need to.
- **Guarantee and End User Software License Agreement**
- **Regulatory Booklet**
- **Wireless Regulations Guide**

Non-printed documentation

My Documentation contains the following VAIO user guides:

- The **User Guide** (this guide) explains the features of your VAIO computer in detail, how to use these features confidently and safely, connect peripheral devices, upgrade your computer, and more.
- The **VAIO Zone** guide explains the valuable features of VAIO's multimedia portal. If your computer has TV tuner functionalities, this is where you will find information about watching/recording TV on your VAIO computer.

My Documentation also gives you:

- Help files about reading the guides.
- Important information about your computer, in the form of notices and announcements.

In **My Info Centre** you can also find:

My Software
Feeling creative? Click this icon for an overview of your software and check out our upgrade options.

My VAIO essentials
Want to expand the capabilities of your VAIO computer? Click this icon and have a look at your compatible accessories.

My Websites
Click this icon and check out our most popular websites.

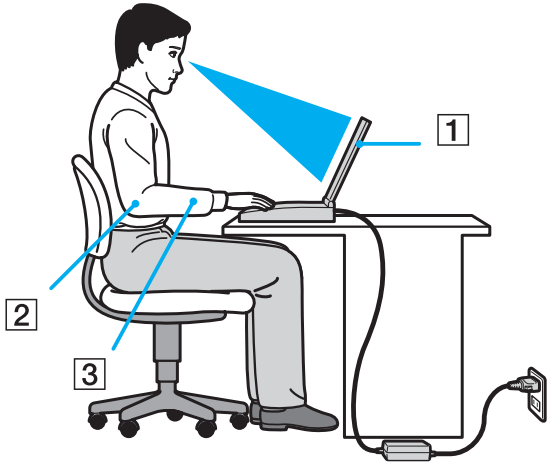
My ISP
Click this icon to find out about the preferential offers from our partners and access the world of the internet.

Further sources

1. Go to **Start** > **Help and Support** for VAIO support information as well as tips and tricks.
2. Consult the **Online Help** files of the software you are using for detailed information on features and troubleshooting.
3. Go to www.club-vaio.com to find online tutorials about your favourite VAIO software.

Ergonomic considerations

You will be using your computer as a portable device in a variety of environments. Whenever possible, you should attempt to take account of the following ergonomic considerations to both stationary and portable environments:



- **Position of your computer** – Place the computer directly in front of you (1). Keep your forearms horizontal (2), with your wrists in a neutral, comfortable position (3) while using the keyboard, touchpad, or external mouse. Let your upper arms hang naturally at your sides. Have breaks during sessions with your computer. Excessive use of the computer may strain muscles or tendons.
- **Furniture and posture** – Sit in a chair with good back support. Adjust the level of the chair so your feet are flat on the floor. A footrest may make you more comfortable. Sit in a relaxed, upright posture and avoid slouching forward or leaning far backwards.
- **Viewing angle of the computer's display** – Use the display's tilting feature to find the best position. You can reduce eye strain and muscle fatigue by adjusting the tilt of the display to the proper position. Adjust the brightness setting of the display as well.

- **Lighting** – Choose a location where windows and lights do not create glare and reflection on the display. Use indirect lighting to avoid bright spots on the display. You can also purchase accessories for your display that help reduce glare. Proper lighting adds to your comfort and work effectiveness.
- **Positioning an external display** – When using an external display, set the display at a comfortable viewing distance. Make sure the display screen is at eye level or slightly lower when you are sitting in front of the monitor.

Using your VAIO computer

Once you have read and followed the information in the printed **Specifications** sheet, you can start using your computer safely and confidently.

Read on to get the most out of using your VAIO computer.

- **Connecting a power source** (page 14)
- **Setting the password** (page 21)
- **Setting up your computer with VAIO Control Center** (page 23)
- **Shutting down your computer safely** (page 26)
- **Using the keyboard** (page 27)
- **Using the touchpad** (page 34)
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- **Using Wireless LAN (WLAN)** (page 62)
- **Using the power saving modes** (page 73)
- **Managing power with VAIO Power Management** (page 76)

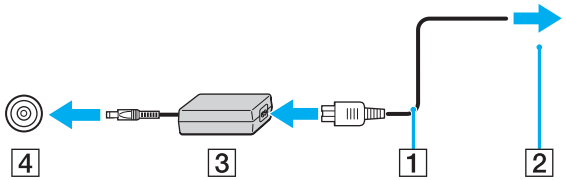
Connecting a power source

You can use either an AC adapter or a rechargeable battery pack as a power source.

Using the AC adapter

To use the AC adapter, proceed as follows:

1. Plug one end of the power cord (1) into the AC adapter.
2. Plug the other end of the power cord into an AC outlet (2).
3. Plug the cable attached to the AC adapter (3) into the DC In connector (4) on the computer.



! The shape of the DC In plug varies depending on the AC adapter.

✍ Use your computer only with the supplied AC adapter.

To disconnect your computer completely from mains voltage, unplug the AC adapter.

Make sure that the socket outlet is easily accessible.

If you do not use the AC adapter for a long period of time, put your computer into **Hibernate** mode. This power saving mode saves you the time of shutting down in the normal way.

Using the battery pack

The battery pack supplied with your computer is not fully charged at the time of purchase.

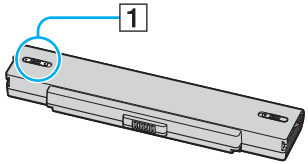
Installing the battery pack

VGN-S series

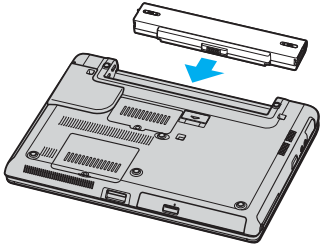
To install the battery pack, proceed as follows:

1 Turn off your computer and close the LCD.

2 Slide the lock lever (1) to the **UNLOCK** position.



3 Slide the battery pack into the compartment until it clicks into place.



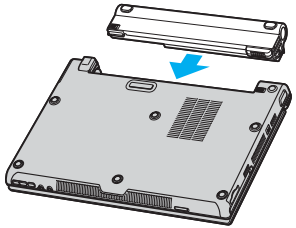
4 Slide the lock lever (1) to the **LOCK** position to secure the battery pack on the computer.

VGN-T series

To install the battery pack, proceed as follows:

1 Turn off your computer and close the LCD.

2 Slide the battery pack into the compartment until it clicks into place.



When the computer is directly connected to AC power and has a battery pack installed, it uses power from the AC outlet.

Charging the battery pack

To charge the battery pack, proceed as follows:

1 Install the battery pack.

2 Connect the AC adapter to the computer.
The computer automatically charges the battery (the battery indicator flashes in a double blink pattern as the battery charges).

Battery indicator status	*Meaning*
On	The computer is using battery power.
Single blink	The battery is running out of power.
Double blink	The battery is charging.
Off	The computer is using AC power.

When the battery is running out of power, both the battery and power indicators blink.

Keep the battery pack installed in the computer while it is directly connected to AC power. The battery pack continues to charge while you are using the computer.

If the battery level falls below 10%, you should either attach the AC adapter to recharge the battery or shut down your computer and install a fully charged battery pack.

The battery pack supplied with your computer is a lithium ion battery and can be recharged any time. Charging a partially discharged battery pack does not affect battery life.

The battery indicator is on while you use the battery pack as a power source. When the battery life is nearly depleted, both the battery and power indicators start flashing.

For some software applications and some peripheral devices, your computer may not enter **Hibernate** mode even when battery life is low. To avoid loss of data when using battery power, you should save your data frequently and manually activate a power management mode, such as **Standby** or **Hibernate**. If the battery wears out when your computer enters **Standby** mode, you will lose any unsaved data. Going back to the previous work state is impossible. To avoid loss of data, you should save your data frequently.

When the computer is directly connected to AC power and has a battery pack installed, it uses power from the AC outlet.

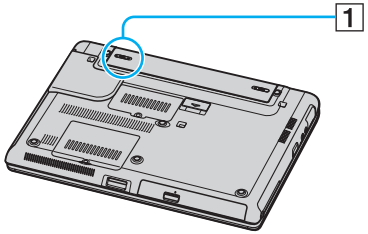
Removing the battery pack

VGN-S series

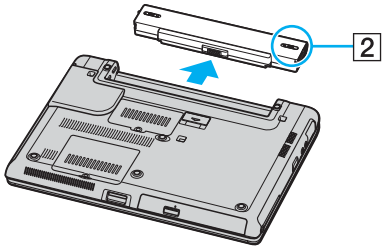
To remove the battery pack, proceed as follows:

1 Turn off your computer and close the LCD.

2 Slide the lock lever (1) to the **UNLOCK** position.



3 Slide and hold the release lever (2) and slide the battery pack away from the computer.

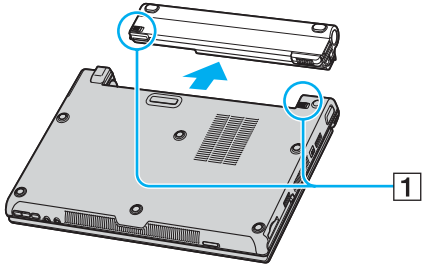


VGN-T series

To remove the battery pack, proceed as follows:

1 Turn off your computer and close the LCD.

2 Slide and hold the release lever (1) and slide the battery pack away from the computer.



You may lose data if you remove the battery pack while the computer is on and not connected to the AC adapter or if you remove the battery pack while the computer is in **Standby** mode.

Setting the password

Use one of the BIOS functions to set the password.

Once you have set the password, you will have to enter the password after the VAIO logo appears. In this way, you can protect your computer from unauthorized access.

!
You cannot start your computer without entering the password. Make sure not to forget the password.

If you forget the password and need assistance to cancel it, a cancellation fee will be charged.

Adding the password

To add the password, proceed as follows:

1. Turn on your computer.
2. Press **F2** when the **VAIO logo** appears.
   The BIOS setup screen appears.
3. Use ← or → to select **Security** to display another screen, select **Set Machine Password**, and then press **Enter**.
4. On the password entry screen, enter the password **twice** and press **Enter**.
   The password should be **up to 7 alphanumeric characters** long.

✍
The following is to configure your computer to prompt password entry when you turn on your computer or display the BIOS setup screen.

5. Select **Password When Power ON** under **Security**.
   Press the space bar to change the setting from **Disabled** to **Enabled**.
6. Use ← or → to select **Exit** and then **Exit (Save Changes)**; and press **Enter**.
   On the **Setup Confirmation** screen, confirm that **Yes** is selected and then press **Enter**.

Changing/removing the password

To change or remove the password, proceed as follows:

1. Turn on your computer.
2. Press **F2** when the **VAIO logo** appears.
   The BIOS setup screen appears.
3. Enter the current password for **Enter Password**:
4. Use ← or → to select **Security** to display another screen, select **Set Machine Password**, and then press **Enter**.
5. On the password entry screen, enter the **current password once** and then a **new password twice**; and press **Enter**.
   To remove the password, leave **Enter New Password** and **Confirm New Password** blank and press **Enter**.
6. Use ← or → to select **Exit** and then **Exit (Save Changes)**; and press **Enter**.
   On the **Setup Confirmation** screen, confirm that **Yes** is selected and then press **Enter**.

Setting up your computer with VAIO Control Center

The **VAIO Control Center** utility allows you to consult system information and specify preferences for system behaviour.

To use VAIO Control Center, proceed as follows:

1. Click the **Start** button on the **Windows** taskbar.
2. In **All Programs**, click **VAIO Control Center**.
   The **VAIO Control Center** window appears.

Control item	*Description*
System Information	Displays the information about your operating system and the hardware architecture.
Initial Setting	You can specify the order in which the system checks for devices containing a bootable system when it starts.
Built-in Pointing Device	You can enable or disable the built-in pointing device.
DVD Button (VGN-T series only)	You can specify operations when the DVD button is pressed. Available pre-defined assignments are: **Stand by**, **Hibernate**, **Max Brightness**, **External Display**[*1], **Launch Application**, **VAIO Zone**, **Bass Boost, VAIO Power Management Viewer**
S Button (VGN-S series only)	You can change the functions assigned to the computer's S buttons. Available pre-defined assignments are: **Muting**[*2], **Stand by**, **Hibernate**, **Max Brightness**, **External Display**[*3], **Launch Application**, **VAIO Zone**, **SSMS Audio Filter**, **Multiple Monitors, VAIO Power Management Viewer**
Screen Resolution (VGN-T series only)	Specify settings for the screen resolution when an external display is connected to your computer.
Plug and Display	You can specify settings for automatic output to the external display.
Bass Boost (VGN-T series only)	You can specify settings for the Bass Boost feature in order to increase the bass sound in the headphone.
Performance (VGN-T series only)	Select a memory and graphics configuration for performance control.

Control item	*Description*
VAIO Power Management Viewer	You can modify power management settings. You can also adjust the allocation of power consumption by modifying settings on the VAIO Power Management tab. Log on as an administrator to modify any settings.
Wireless Switch Settings*4	You can select the option of the wireless function that is activated when you set the WIRELESS switch on your computer to ON.

*1 Default DVD button assignment

*2 Default S1 button assignment

*3 Default S2 button assignment

*4 Only models with the Bluetooth functionality. See the printed **Specifications** sheet for more information.

3 Select the desired control item.

4 Once finished, click **OK**.
The item has been changed.

For more information about each option, click **Help** on the **VAIO Control Center** window to display the help file.

Some of the control items will not be visible If you open **VAIO Control Center** as a limited user.

Changing the performance setting (VGN-T series)

To change the memory and graphics configuration that affects power consumption during normal operation, proceed as follows:

1. Click the **Start** button on the **Windows** taskbar.
2. In **All Programs**, click **VAIO Control Center**.
   The **VAIO Control Center** window appears.
3. Select **Performance**.
4. Select **Memory bus: 266 MHz/Graphics core frequency: 200 MHz Priority is given to power saving**.
   By default, **Memory bus: 266 MHz/Graphics core frequency: 200 MHz Priority is given to power saving** is selected.
5. Click **OK**.

!
To activate the change, you must restart your computer.

If **Memory bus: 333 MHz/Graphics core frequency: 250 MHz Priority is given to performance** is selected, internal heat will be built up and make the bottom of your computer hotter, compared with **Memory bus: 266 MHz/Graphics core frequency: 200 MHz Priority is given to power saving**.

Shutting down your computer safely

It is important that you shut down your computer properly so you do not lose unsaved data.

To shut down your computer, proceed as follows:

1. Turn off any peripherals connected to your computer.
2. Click the **Start** button.
3. Click **Turn Off Computer**.
   The **Turn off computer** window appears.
4. Click **Turn Off**.
5. Respond to any prompts warning you to save documents or to consider other users and wait for your computer to turn off automatically.
   The power indicator turns off.

See the printed **Troubleshooting Guide** if you have problems shutting down your computer.

Using the keyboard

Your keyboard is very similar to a desktop computer's, but has additional keys that perform model-specific tasks.

For more information on the standard keys, see Windows **Help and Support Center**.

The VAIO-Link website (www.vaio-link.com) also contains glossary information to help you use the keyboard.

Combinations and functions with the <**Fn**> key

Combinations/Feature	*Functions*
<Fn> + **(F2)**: speaker switch (VGN-S series only)	Turns on and off the built-in speakers and the headphones.
<Fn> + **(F3/F4)**: speaker volume (VGN-S series only)	Adjusts the built-in speaker volume. To increase volume, press **<Fn>+<F4>** and then ↑ or →, or keep pressing **<Fn>+<F4>**. To decrease volume, press **<Fn>+<F3>** and then ↓ or ←, or keep pressing **<Fn>+<F3>**.
<Fn> + **(F5/F6)**: brightness control	Adjusts the brightness of the LCD. To increase lightness intensity, press **<Fn>+<F6>** and then ↑ or →, or keep pressing **<Fn>+<F6>**. To decrease lightness intensity, press **<Fn>+<F5>** and then ↓ or ←, or keep pressing **<Fn>+<F5>**.
<Fn> + LCD/ **(F7)**: switch to the external display	Toggles between the LCD, external device (e.g. monitor) and both LCD and external device.

Combinations/Feature	*Functions*
<Fn> + **(F10)**: zoom (VGN-T series only)	Changes the screen resolution to magnify/restore the screen view. The default resolutions of the standard view and the magnified view are as follows: Standard view: 1280 x 768 pixels Magnified view: 1024 x 600 pixels The magnified view is not as clear as the standard view, as it is implemented by applying a lower resolution to the LCD screen with a higher resolution. This shortcut key is disabled during video playback. Make sure to quit such software before pressing the shortcut key. This shortcut key may not work with graphic images as it magnifies the screen view by changing the resolution. The location and size of software windows may change when the screen view is magnified or the standard view is restored because pressing this shortcut key changes the resolution. When the LCD screen view is magnified, switching the view to the external display disables the function and restores the standard view.
<Fn> + **(F12)**: Hibernate	Provides for the lowest level of power consumption. When you execute this command, the states of the system and of the peripheral devices are written to the hard disk and the system power is turned off. To return the system to its original state, use the power switch to turn on the power. For details on power management, see the section **Using the power saving modes** **(page 73)**.
<Fn> + **<B>**: bass boost (VGN-T series only)	Turns on the **Bass Boost** function. This means that the bass sound level is enhanced at all levels without distorting other frequencies (only with headphones).
<Fn> + **<F>**: screen view	Magnifies/restores the screen view when the current screen resolution is lower than the default. Magnifying the screen view does not change the resolution. ! This shortcut key only applies to your computer's screen. This shortcut key is disabled during video playback.

Some functions are not available until Windows is launched.

Indicators

Indicator	*Functions*
Power	**Power on**: lights green. **Standby mode**: flashes umber.
Battery	Indicates the status of the battery.
Wireless LAN	Turns on when the Wireless LAN is activated. Turns off when the Wireless LAN is not activated.
Bluetooth *	Turns on when the Bluetooth functionality is activated. Turns off when the Bluetooth functionality is not activated.
Memory Stick Pro/Duo	Turns on when the **Memory Stick** is in use. Turns off when the **Memory Stick** is no longer in use.
Optical disc drive (VGN-S series) Optical disc drive (VGN-T series)	Turns on when the optical disc drive is in use. Turns off when the optical disc drive is no longer in use.
Mute (VGN-T series only)	Turns on when the volume is turned off.
SOUND EFFECT (VGN-T series only)	Turns on when the SOUND EFFECT function is activated.
Hard disk	Turns on when data is read from or written to the hard disk drive. Turns off when the hard disk drive is not being accessed.
Num Lock	Turns on when the number keys in the numeric keypad area are active. Turns off when the alphanumeric character keys in the keypad area are active.
Caps Lock	Turns on when the letters appear in uppercase as you type. The <**Shift**> key lowers the case of typed characters when **Caps Lock** is on. Turns off when the letters appear in lowercase as you type (unless you hold down the <**Shift**> key).
Scroll Lock	Turns on when the screen scrolls differently (Not all applications support this function). Turns off when the information moves across the display normally.

* Depending on your model. See the printed **Specifications** sheet for more information.

Troubleshooting the keyboard

A key top has fallen off

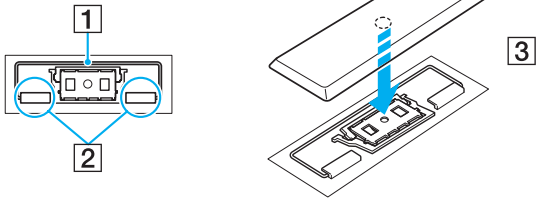
❑ If any of the following keys falls off, replace the key top as shown below.
VGN-S series: Backspace, Enter, Shift, Caps Lock, or space bar
VGN-T series: Backspace, Enter, right/left Shift, Caps Lock, space bar
If any other key top falls off, place it back into position and push it in from above until it clicks.

To replace a key top

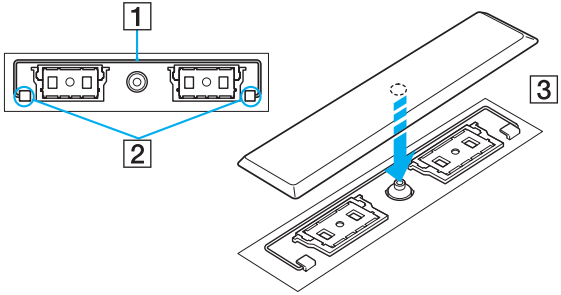
Remove the wire (1) from the key top, then attach it to the hooks (2) on the key unit. Align the centre of the key top and press it from above (3) until it clicks.

VGN-S series

❑ Backspace key, Enter key, Shift key, Caps Lock key

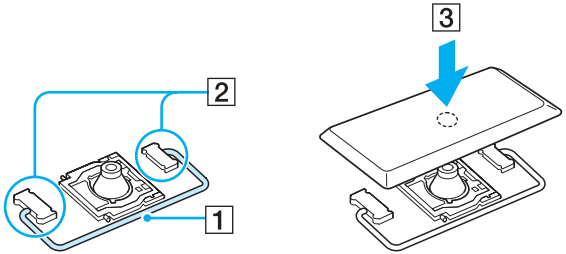


❑ Space bar key

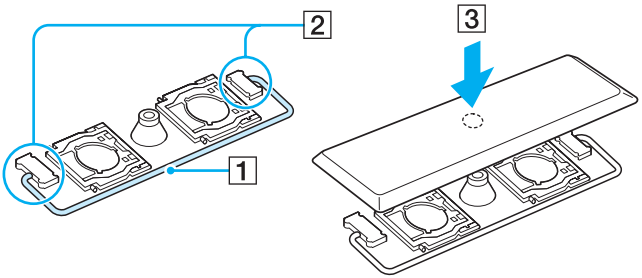


VGN-T series

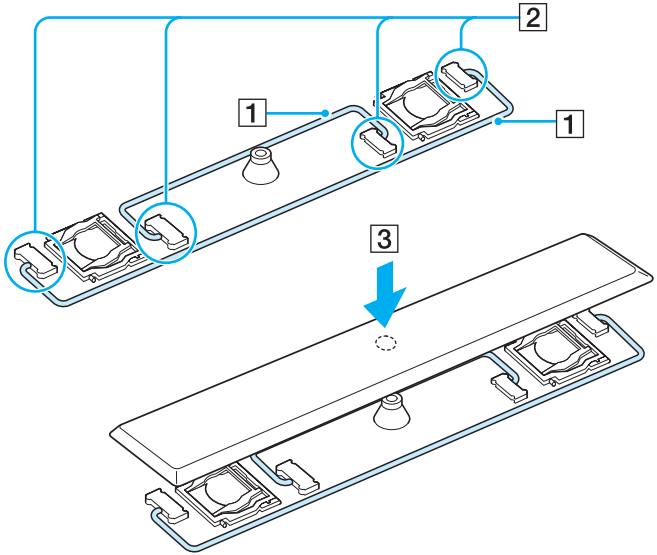
❑ Caps Lock key, left Shift key, Backspace key, Enter key



❑ right Shift key



❑ Space bar key

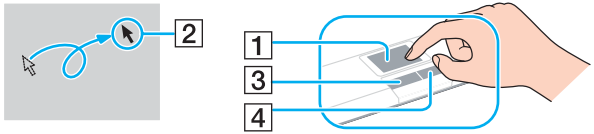


!
Do not take off the key top intentionally, as it may cause a malfunction.

Do not push the key top excessively when you replace it, as it may cause a malfunction. Handle the key tops with care.

Using the touchpad

The keyboard contains a cursor-pointing device, your touchpad (1). You can point to, select, drag, and scroll objects on the screen using the built-in touchpad.



Action	*Description*
Point	Slide one finger on the touchpad to place the pointer (2) on an item or object.
Click	Press the left button (3) once.
Double-click	Press the left button twice.
Right-click	Press the right button (4) once. In many applications, this action displays a shortcut menu.
Drag	Slide one finger while pressing the left button.
Scroll	Move your finger along the right edge of the touchpad to scroll vertically. Move your finger along the bottom to scroll horizontally (the scroll function is available only with applications that support a touchpad scroll feature).

Using special buttons

Your computer is provided with special buttons to help you use the computer.

VGN-S series

S1/S2 buttons

:

By default, the **S1** button turns on and off the speaker volume and the **S2** button toggles the display output between the LCD and external device. You can also link another action that you execute often to these shortcut buttons. See **Setting up your computer with VAIO Control Center** **(page 23)**.

VGN-T series

- **DVD** button

:

  The **DVD** button offers you great convenience for DVD/CD playback. Just press the **DVD** button to start/stop playing movies and music. You can also link another action that you execute often to this shortcut button. Press and hed the **DVD** button to launch **VAIO Control Center**. For more information, see **Setting up your computer with VAIO Control Center** **(page 23)**.

- **Play/Pause** button

:

  Starts or pauses DVD/CD playback with VAIO Zone.

- **Stop** button

:

  Stops DVD/CD playback with VAIO Zone.

- **Previous track** button :

  Plays the previous chapter/movie in the DVD or the previous song in the CD during DVD/CD playback with VAIO Zone. You can also press and hold this shortcut button for rewinding.

- **Next track** button :

  Plays the next chapter/movie in the DVD or the previous song in the CD during DVD/CD playback with VAIO Zone. You can also press and hold this shortcut button for fast-forwarding.

- **Mute/SOUND EFFECT** button:

  Turns on and off the speaker volume. You can also press and hold this shortcut button to activate the SonicStage Mastering Studio Audio Filter function and select the sound effects.

- **Volume** buttons (**Volume up** and **Volume down**):

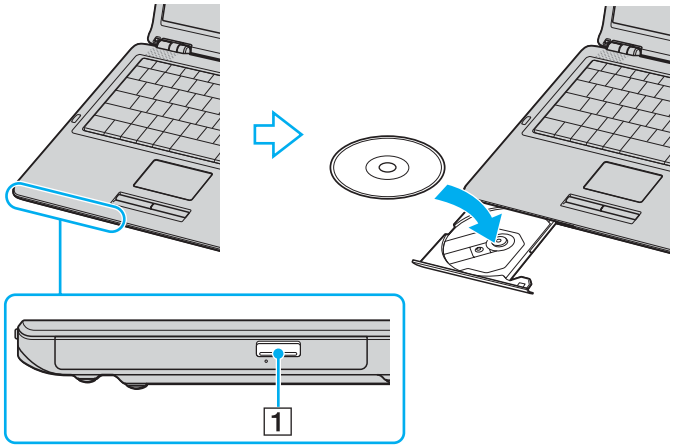
  Increase and decrease the volume.

Using the optical disc drive

Your computer is equipped with an optical disc drive. See the **Specifications** sheet for details on your model.

To insert a disc, proceed as follows:

1. Turn on the computer.
2. Press the eject button (1) to open the drive.
   The tray slides out.
3. Place a disc in the middle of the tray with the label side facing up until the disc clicks into place.



4. Close the tray by pushing it gently.

See the printed **Troubleshooting Guide** if you have problems using discs.

The location of the eject button depends on the model of your computer. See the printed **Specifications** sheet for details on your model.

Reading and writing CDs and DVDs

To achieve optimum performance when writing data on to disc (also called "burning"), follow these recommendations:

- To make the data on a disc readable on an optical disc drive, you need to close the session when you eject it. To complete this process, follow the instructions included with your software.
- Only use circular discs. Do not use discs in any other shape (star, heart, card, etc.), as this may damage the optical disc drive.
- Do not strike or shake the computer while writing data to a disc.
- For optimal writing speed, deactivate the screensaver before writing data to a disc.
- Memory-resident disc utilities may cause unstable operation or data loss. Deactivate these utilities before writing data to a disc.
- When using your software application to burn discs, make sure you exit and close all other applications.
- Never touch the surface of the disc. Fingerprints and dust on the surface of a disc may cause writing errors.
- Do not put your VAIO computer into a power saving mode while using the pre-installed software and while using the CD burning software.
- Never put stickers on discs. This will affect the use of the disc irreparably.
- In rare cases, some DVD players and computer's DVD drives may not be able to play DVDs created with **VAIO Zone**.

✍
Ultra-speed CD-RW is supported.

Supports writing to DVD-RW discs compliant with DVD-RW version 1.1/1.2.*

Supports 8cm disc reading, but does not support 8cm disc writing.

* Depending on your model. See the printed **Specifications** sheet to see whether your model is equipped with the optical disc drive capable of DVD writing.

Playing DVDs

To achieve optimum performance when playing DVDs, you should follow these recommendations.

- You can play DVDs using the optical disc drive and the **VAIO Zone** software. See the help file on the **VAIO Zone** software for details.
- Close all open applications before playing a DVD movie.
- Do not use resident disc utilities or resident utilities to speed up the access of discs, because they may cause the system to become unstable.
- Make sure that the screensaver is deactivated.
- Region codes indicators are labelled on the DVDs to indicate in which region and on what type of player you can play the disc. Unless a "2" (Europe belongs to region "2") or "all" (this means that you can play this DVD everywhere in the world) is labelled on your DVD disc or on the packaging, you cannot play the disc on this player.
- Do not try to change the region code settings of the DVD drive. Any difficulties caused by changing the region code settings of the DVD drive are out of warranty.
- If your computer has Wireless LAN and Wireless LAN is activated, playing DVDs may cause some interruptions in audio and video.

Troubleshooting the optical disc drive

My optical disc drive tray does not open

- Make sure the computer is turned on and press the disc eject button*.
- Go to **Start** > **My Computer**. Right-click the optical disc drive and select **Eject**.
- Make sure the computer is not in **Standby** or **Hibernate** mode.
- If this does not work, try the following:
  Turn off the computer and insert a sharp, pointed object (for example a paperclip) into the manual eject hole* on the optical disc drive to slide out the tray.

* The location of the eject button and hole depends on the model of your computer. See the printed **Specifications** sheet for details on your model.

I cannot play a disc

- After inserting the disc, wait for a few seconds for the system to detect it before you try to access it.
- Make sure the label of the disc is facing up.
- If the disc requires software, make sure the software is installed according to the instructions of the program.
- Check the volume of your speakers.
- Clean the disc with an appropriate cleaner.
- Make sure your computer is running on AC power supply only and try the disc again.
- There may be condensation in the drive. Remove the disc and leave the drive open for approximately one hour. Remove the battery while you wait for the condensation to disappear.

I cannot play a DVD

- If a region code warning appears when you are using your DVD player, it could be that the DVD you are trying to play is incompatible with the optical disc drive on your computer. The region code is listed on the packaging of the disc.
- Change the resolution under **Control Panel** - **Display** to a lower resolution.
- If you see video but cannot hear sound, check all of the following:
  - Make sure the mute setting is off on your DVD player.
  - Check the **Master Volume** settings of the **Sounds and Audio Device Properties**.
  - If you have connected speakers externally, check the volume settings of your computer speakers and check the connections between your speakers and the computer.
  - In the **Device Manager**, check that the correct drivers are installed properly. To display the **Device Manager**, go to **Start** > **Control Panel** > **Performance and Maintenance**. Click the **System** icon and then the **Device Manager** button on the **Hardware** tab.
- A dirty or damaged disc may cause the computer to "hang" while it tries to read the disc. If necessary, reboot the computer, remove the disc and then check that it is not dirty or damaged.
- Check your PG settings (Parental Guidance) in the DVD software as they might be preventing you from playing certain DVDs when they are activated.

✍
On your computer, the default DVD region code is 2. Do not change this setting using the **Region Code Change** function in Windows, or using any other software applications. System malfunctions originating from the user changing the DVD region code are beyond the scope of your warranty and will result in service charges for repair.

If you do not immediately see the **Display** icon after clicking **Control Panel**, click **Switch to Classic View** on the left.

I cannot play a DVD when using two screens

- You will not have a problem in the following situations:
  - When you use a CRT or an LCD display on its own.
  - When you play MPEG files which are recorded on the hard disk drive with **Windows Media Player 10** or **VAIO Zone**.

The reading speed of CD/DVD-RWs is very slow

Generally, the reading speed of a CD/DVD-RW is slower than that of a -ROM or -R. The reading speed can also vary depending on the type of format.

The disc tray does not eject even when the eject button is pressed

- Check that the computer is turned on.
- The CD-writing application software may be stopping the disc from being ejected.
- Make sure the computer is not in **Standby** or **Hibernate** mode.

The disc tray ejects even when it has been locked into place

- Ensure that the disc is placed with the label side facing up.
- Clean the disc and the optical disc drive lens with an appropriate cleaner.
- The disc may be scratched. Place another disc to see if that is the reason.
- There may be condensation in the drive. Remove the disc and leave the drive open for approximately one hour. Remove the battery while you wait for the condensation to disappear.

Using PC Cards

Your VAIO computer is equipped with a PC Card slot. PC Cards allow you to connect portable external devices.

You do not need to shut down your computer before inserting or removing a PC Card.

Inserting a PC Card

VGN-S series

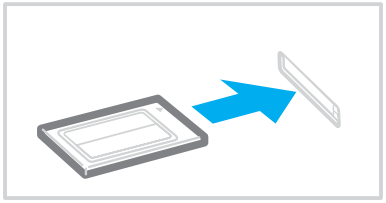
To insert a PC Card, proceed as follows:

1. Insert the PC Card into the PC Card slot with the front label facing upwards.
2. Gently push the PC Card into the connector.
   The PC Card is automatically detected by your system.
   The **Safely Remove Hardware** icon appears in the system tray.

VGN-T series

To insert a PC Card, proceed as follows:

1. Push the PC Card release button so that the release button pops out.
2. Push the PC Card release button a second time so that the PC card slot protector pops out.
3. Gently take hold of the card and pull it out of the slot.
4. Insert the PC Card into the PC Card slot with the front label facing upwards.
5. Gently push the PC Card into the connector.
   The PC Card is automatically detected by your system.
   The **Safely Remove Hardware** icon appears in the system tray.



Some devices may not function properly if you repeat returning to Normal mode from Standby mode or Hibernate mode.

The computer will return to its original state if you restart it.

Make sure you use the most recent software driver provided by the PC Card manufacturer.

If an "!" mark appears on the **Device Manager** tab in the **System Properties** dialog box, remove the software driver and then reinstall it.

Do not force a PC Card into the slot. It may damage the connector pins. If you have difficulty inserting a PC Card, check that you are inserting the PC Card in the correct direction. See the manual supplied with your PC Card for more information on use.

For some PC Cards, if you alternate between **Normal** power operation and **Standby** or **Hibernate** power management modes while the card is inserted, you may find that a device connected to your system is not recognised. Restart your system to correct the problem.

Do not carry your computer while touching the head of a PC Card, as pressure or shock may damage the connector pins.

Removing a PC Card

Follow the steps below to remove the PC Card while your computer is on. If it is not removed properly, your system may not work properly. If you want to remove a PC Card when your computer is off, skip steps 1 to 7.

To remove a PC Card, proceed as follows:

1. Double-click the **Safely Remove Hardware** icon in the system tray.
   The **Safely Remove Hardware** dialog box appears.
2. Select the hardware you want to unplug.
3. Click **Stop**.
4. In the **Stop a Hardware Device** dialog box, confirm that the device can be safely removed from the system.
5. Click **OK**.
   A dialog box appears, explaining that it is safe to remove the device.
6. Click **OK**.
7. Click **Close**.
8. Push the PC Card release button so that the release button pops out.
9. Push the PC Card release button a second time so that the PC Card pops out.
10. Gently take hold of the Card and pull it out of the slot.
11. If your computer is VGN-T series, insert the PC card slot protector into the PC Card slot.
12. If the PC Card release button is still out, push it back in.

If you remove the PC Card from the computer when it is still turned on, your system might crash and you might lose data that you did not save before.

Before you remove the PC Card, click the PC Card icon on the taskbar and close the card. Close any applications that use the PC Card before removing the card. Otherwise, data may be lost.

While the card is inserted, your computer may not enter the **Hibernate** power management mode. It may enter **Standby** mode. It is recommended that you remove the card before your computer enters **Hibernate** mode by pressing the <**Fn**>+<**F12**> keys, and when it is set to enter **Hibernate** automatically while using a battery as the source of power.

Some PC Cards or their functions may not be compatible with your computer.

Troubleshooting PC Cards

My PC Card is not working

Make sure the PC Card is compatible with your version of Windows.

Using the Memory Stick

Your VAIO computer is designed to support the Memory Stick. The Memory Stick is a compact, portable, and versatile device especially designed for exchanging and sharing digital data with compatible products, such as digital cameras and mobile phones. Because it is removable, it can be used for external data storage.

Use the flash memory technology to download anything that can be converted into digital data, such as pictures, music, words, sounds, movies and photographs. The Memory Stick family ranges in capacity and compatibility.

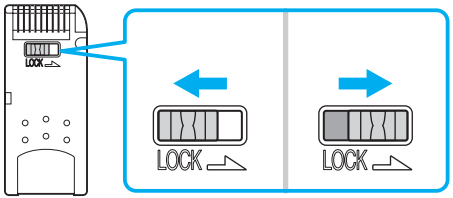
See the printed **Specifications** sheet to see which Memory Stick types are compatible with your VAIO and if there are any limitations.

- You can purchase Memory Sticks from the Sony Style website (www.sonystyle-europe.com), or from your local Sony dealer.
- Detailed information about which VAIO computers are compatible with which Memory Sticks can be found here: www.vaio-link.com.

Write-protecting a Memory Stick

Some Memory Sticks are designed with an erasure prevention switch to protect valuable data from accidental erasure or overwriting.

Move the tab horizontally or vertically* to set or release write-protection. When the erasure prevention switch is off, data can be saved on the Memory Stick. When the erasure prevention switch is on, data can be read from but not saved on the Memory Stick.



* Some kinds of Memory Stick do not have an erasure prevention switch.

Inserting a Memory Stick

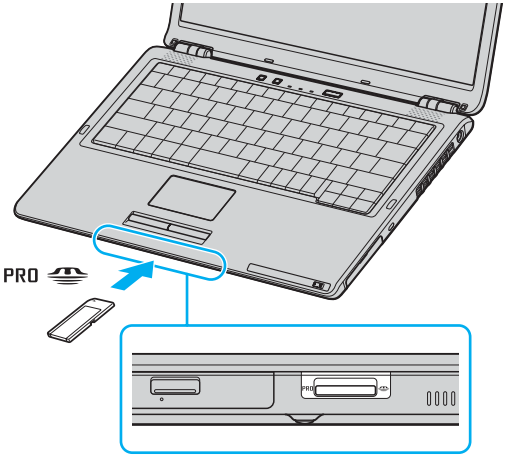
There are two ways you can insert a Memory Stick in your computer:

- Using the Memory Stick slot;
- Using a PC Card slot. To do this, you need an optional PC Card adapter.

You can only insert one Memory Stick at a time.

To insert a Memory Stick using the Memory Stick slot, proceed as follows:

1. Once you have stored your data from your digital device, insert the Memory Stick with the arrow facing up and toward the Memory Stick slot.
2. Carefully slide the Memory Stick into the slot until it clicks in place.
   The Memory Stick is automatically detected by your system and appears in your **My Computer** window as a local drive, under the appropriate letter (depending on the configuration of your computer).



✍
The location of the Memory Stick slot depends on the model of your computer. See the **Specifications** sheet for details on your model.

!
Hold the Memory Stick with the arrow pointing in the correct direction when you insert it into the slot. To avoid damaging the computer or the Memory Stick, do not force the Memory Stick into the slot if it does not insert smoothly.

✍
Your computer supports Memory Stick Duo. For more information on Memory Stick Duo, please visit the Memory Stick website.

!
Do not insert the Memory Stick and the Memory Stick Duo together into the Memory Stick slot of your computer, as it may damage the slot as well as the Memory Stick and the Memory Stick Duo.

Removing a Memory Stick

To remove a Memory Stick using the Memory Stick slot, proceed as follows:

1. Check that the Memory Stick indicator is off.
2. Push in the Memory Stick towards the computer.
   The Memory Stick ejects.
3. Pull the Memory Stick out of the slot.

✍
Always remove the Memory Stick gently, or it may pop out unexpectedly.

Do not remove the Memory Stick while the Memory Stick indicator is turned on. If you do, you may lose data. Loading large volumes, for example, image clips, may take a while.

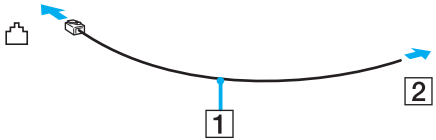
Using the modem

Your VAIO computer is equipped with an internal modem.

You need to connect to a phone line to take advantage of online services and the Internet, as well as to register your computer and software online, and to contact VAIO-Link.

To connect a phone line, proceed as follows:

1. Plug one end of the phone cable (1) into the modem connector on the computer.
2. Plug the other end into the wall jack (2).



Troubleshooting the modem

My modem does not work or cannot establish a connection

- Check that the phone line is plugged into your computer.
- Make sure that the modem is the only device connected to your phone line.
- Check that the phone line is working. You can check the line by plugging in an ordinary phone and listening for a dial tone.
- Check that the phone number the program is dialling is correct. The modem dialling mode may be incompatible with your telephone line.
- The modem may not work properly if you are with a Private Automatic Branch eXchange (PABX).
- In the **Phone and Modem Options** dialog box (**Control Panel** / **Printers and Other Hardware** / **Phone and Modem Options**), check that your modem is listed on the **Modems** tab, and that the location information is correct on the **Dialing Rules** tab. If you do not see the **Phone and Modem Options** icon, click **Switch to Classic View** on the left side.
- We recommend you use country-specific phone plug to plug the phone line into the wall jack, because use of any other phone plug can decrease the connection quality.
- Your computer cannot be connected to a coin-operated telephone, and may not work with multiple phone lines or a private branch exchange (PBX). If you connect the modem to a parallel connected phone line, the modem or the other connected device may not function properly. Some of these connections may result in excess electrical current and could cause a malfunction in the internal modem.
- Only DTMF (Dual Tone Multi Frequency) signalling (tone dialling) is supported.
- The internal modem is intended to be used for data and fax communications using DTMF (Dual Tone Multi Frequency) signalling (tone dialing) on the PSTN (Public Switched Telephone Network) networks in the following countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Greece, Germany, Iceland, Ireland, Italy, Luxembourg, Norway, Portugal, Spain, Sweden, Switzerland, the Netherlands and the United Kingdom.
- Before using the modem, it will be necessary to select the country where you are actually using it. The detailed procedure for selecting your present location is explained in **Configuring your modem** **(page 127)**.
- If your computer is equipped with the flexible modem connector cover, do not pull it too forcefully.

My modem connection is slow

Many factors influence modem connection speed, including telephone line noise or compatibility with telephone equipment (such as fax machines or other modems). If you think your modem is not connecting properly to other PC-based modems, fax machines, or your Internet Service Provider, check the following:

- Have your phone company check that your phone line is free from any line noise.
- If your problem is fax-related, check that there are no problems with the fax machine you are calling and that it is compatible with fax modems.
- If you are having a problem connecting with your Internet Service Provider, check that the ISP is not experiencing technical problems.
- If you have a second phone line available, try connecting the modem to that line.

Using the Bluetooth functionality

If your VAIO computer is equipped with the Bluetooth functionality*, you can establish wireless communication between your computer and other Bluetooth devices such as another computer or a mobile phone. You can transfer data between these devices without cables and up to 10 metres range in open space.

* Depending on your model. See the printed **Specifications** sheet for more information.

To connect to a Bluetooth device, proceed as follows:

1. Turn on the **Wireless** switch.
   The **Switch wireless devices** dialog box appears.
2. Select the **Bluetooth** option.
3. Click **OK**.

✍
Read the **Regulations Guide** before using the Bluetooth functionality.

The 2.4 GHz band with which Bluetooth devices or wireless LAN devices work, is used by various devices. Bluetooth devices use the technology to minimize the interference from other devices that use the same wave length. Communication speed and distances can be inferior to the standard values. Interference from other devices may also stop communications. Do not simultaneously use the Bluetooth function and wireless communication devices which use the 2.4 GHz band, such as a wireless LAN PC Card.

!
The Bluetooth functionality may not work depending on the third party devices or the software version used by third party companies.

!
When you purchase Bluetooth devices, check their operating conditions.

Bluetooth security

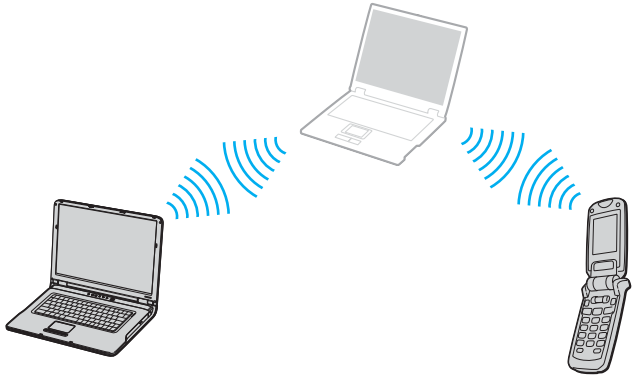
The Bluetooth wireless technology has an authentication function, which allows you to make sure with whom you communicate. With the authentication function, you can avoid any anonymous Bluetooth device to access your computer.

The first time two Bluetooth devices communicate, a common **Passkey** (a password required for authentication) should be determined for both devices to be registered. Once a device is registered, there is no need to re-enter the **Passkey**.

You can change your settings in order not to be discovered by other Bluetooth devices or you can set a limit.

Communicating with another Bluetooth device

You can connect your computer to a Bluetooth device such as another computer or a mobile phone without any cables.



To communicate with another Bluetooth device, proceed as follows:

1. Turn on the **Wireless** switch.
2. Choose **Start** > **Control Panel** > **Network and Internet Connections** > **Bluetooth Devices**.
   The **Bluetooth Device** dialog appears.
3. Click **Add**.
   The **Add Bluetooth Device Wizard** appears.
4. Select the check box **My device is set up and ready to be found** and then click **Next**.
5. Select the remote device you want to connect to. If necessary, scroll up and down in the **Bluetooth Device List** to make your selection. Then click **Next**.

6 Choose one of the following options:

- If you want Windows to provide you with a password, select **Choose a Passkey for me**.
- If the documentation of the other Bluetooth device contains a password, click **Use the passkey found in the documentation** and enter the passkey.
- If you want to create your own passkey, click **Let me use my own passkey** and enter a passkey.
- If your device does not use a passkey, click **Don't use a passkey**.

7 Click **Next** to continue.

8 Once the remote device has been successfully authenticated, click **Finish**.

✍ Do not simultaneously use the Bluetooth functionality and wireless communication devices which use the 2.4 GHz band such as a wireless LAN PC Card.

The passkey can be different each time, but must be the same at both ends.

For certain devices, such as a mouse, no passkey can be entered.

Communicating with another Bluetooth device using the Bluetooth File Transfer Wizard

You can easily transfer data, such as files or pictures, to another Bluetooth device.

To transfer data from or to another Bluetooth device, proceed as follows:

1. Choose **Start** > **All Programs** > **Accessories** > **Communications** > **Bluetooth File Transfer Wizard**.
   The **Bluetooth File Transfer Wizard** appears.
2. Click **Next** to continue.
3. Follow the steps in the **Bluetooth File Transfer Wizard** to communicate with another Bluetooth device.

✍
Do not simultaneously use the Bluetooth functionality and wireless communication devices which use the 2.4 GHz band such as a wireless LAN PC Card.

The passkey can be different each time, but must be the same at both ends.

For certain devices, such as a mouse, no passkey can be entered.

Connecting to a network with Bluetooth device

With Bluetooth connections, you can join a personal area network (PAN), which is an Internet Protocol (IP)-based network.

1. Turn on the **Wireless** switch.
2. Choose **Start** > **Control Panel** > **Network and Internet Connections** > **Network Connections** > **Bluetooth Network Connection**.
   The **Bluetooth Personal Area Network Device** dialog appears.
   - ❑ If you wish to connect to a Bluetooth device that is not displayed, click **Add**.
   - ❑ If you wish to connect to a displayed Bluetooth device, select the devices's icon and click **Connect**.
3. Follow the wizard to set up the connection.

Stopping the Bluetooth connection

To stop the Bluetooth connection, turn off the **Wireless** switch. The Bluetooth LED turns off.

Additional information

- The data transfer rate varies, depending on the following conditions:
  - Obstacles, such as walls, located between devices
  - Distance between devices
  - Material used in walls
  - Proximity to microwaves and cordless telephones
  - Radio frequency interference and other environmental conditions
  - Device configuration
  - Type of software application
  - Type of operating system
  - Use of both Wireless LAN and Bluetooth functionalities at the same time on the computer
  - Size of file being exchanged
- The 2.4 GHz radio frequency used by Bluetooth® and wireless LAN devices is also used by other devices. Bluetooth devices incorporate technology that minimizes interference from other devices using the same wavelength, however, communication speed and connection range may be reduced. Interference from other devices may also stop communication altogether.
- Please note that due to limitations of the Bluetooth standard, large files may occasionally be corrupted during continuous transfer due to electromagnetic interference from the environment.
- All Bluetooth devices must be certified to make sure that the applicable standard requirements are maintained. Even if standards are met, individual device performance, specifications, and operation procedures can vary. Data exchange may not be possible in all situations.

Troubleshooting the Bluetooth functionality

I cannot use the Bluetooth functionality

- If the Bluetooth LED is off, turn on the **Wireless** switch.
- You cannot use the Bluetooth functionality when the computer is in a power saving mode. Return to normal mode, then turn on the **Wireless** switch located on your computer.

The connected device does not appear in the Bluetooth Device List

If the connected device is also connected to other devices, it may not appear on the **Devices** tab in the **Bluetooth Device** dialog or you may not be able to communicate with the device.

I cannot find the Bluetooth device with which I want to communicate

- Check that the Bluetooth functionality of the device with which you want to communicate is on. See the other device's manual for more details.
- If the device with which you want to communicate is already communicating with another Bluetooth device, it may not be found or it may not be able to communicate with your computer.
- To allow other Bluetooth devices to communicate with your computer, go to the **Options** tab in the **Bluetooth Device** dialog and select the check box **Allow Bluetooth devices to connect to this computer**.
  For more information on the Bluetooth Device dialog, see **Communicating with another Bluetooth device** **(page 55)**.

The data transfer speed is slow

The data transfer speed depends on the obstacles and/or the distance between the two devices, but also on the radio wave quality, the operating system or the software used. Try to move your computer or try to place the two devices closer.

I cannot communicate with the other device although the distance between both devices is within 10 metres

- The data transfer distance can be shorter than 10 metres depending on existing obstacles between the two devices, on radio wave quality, on the operating system or the software used. Try to move your computer or to place both devices closer.
- If the device with which you want to communicate is already communicating with another Bluetooth device, it may not be found or it may not be able to communicate with your computer.
- Check that the Bluetooth functionality of the device with which you want to communicate is on. See the other device's manual for more details.

File transmission and reception fail.

When transmitting a file with the **Bluetooth File Forwarding Wizard**, the receiving device must be set beforehand to receive incoming transmissions.

To set a device to receive incoming transmissions, proceed as follows:

1. Start the computer and turn on the Bluetooth device.
2. Choose **Start** > **All programs** > **Accessories** > **Communications** > **Bluetooth File Forwarding Wizard**.
3. Click **Next**, select the check box next to **Receive files**, and click **Next** again.

The message The Bluetooth device requires authentication appears in the notification area.

The target Bluetooth enabled device is requesting connection authentication. Mutual authentication is required to enable Bluetooth communications with this device.

Cannot connect to service supported by target Bluetooth device.

Connection is only possible for services also supported by the computer equipped with the Bluetooth functionality.For more details, refer to the **Bluetooth Device** Help in Windows XP and/or the operating instructions or electronic manual for the targeted Bluetooth device.

Unable to exchange business card data with a cellular phone.

The business card exchange function is not supported.

Using Wireless LAN (WLAN)

Thanks to Sony's Wireless LAN (WLAN), all your digital devices with built-in WLAN functionality communicate freely with each other through a powerful network. A WLAN is a network in which a mobile user can connect to a local area network (LAN) through a wireless (radio) connection. So there is no need anymore to pull cables or wires through walls and ceilings.

The Sony WLAN supports all normal Ethernet activities, but with the added benefits of mobility and roaming. You can still access information, internet/intranet and network resources, even in the middle of a meeting, or as you move from one place to another.

You can communicate **without an Access Point**, this means that you can communicate between a limited number of computers (**ad-hoc**), or you can communicate **through an Access Point**, which allows you to create a full infrastructure network (**infrastructure**).

In some countries, using WLAN products may be restricted by the local regulations (e.g. limited number of channels). Therefore, before activating the WLAN functionality, read the **Wireless LAN Regulation** carefully. Channel selection is explained further in this manual (see **Wireless LAN channel selection** **(page 69)**).

WLAN uses the IEEE 802.11b/g standard, which specifies the used technology. The standard includes the encryption method: **Wired Equivalent Privacy** (WEP), which is a security protocol and **WiFi Protected Access** (WPA - Proposed jointly by the IEEE and Wi-Fi Alliance, WiFi Protected Access is a specification of standards based, interoperable security enhancements that increase the level of data protection and access control for existing WiFi networks. WPA has been designed to be forward compatible with the IEEE 802.11i specification. It utilizes the enhanced data encryption TKIP (Temporal Key Integrity Protocol) in addition to user authentication using 802.1X and EAP (Extensible Authentication Protocol)). Data encryption protects the vulnerable wireless link between clients and Access Points. Besides that, there are other typical LAN security mechanisms to ensure privacy, such as: password protection, end-to-end encryption, virtual private networks, and authentication.

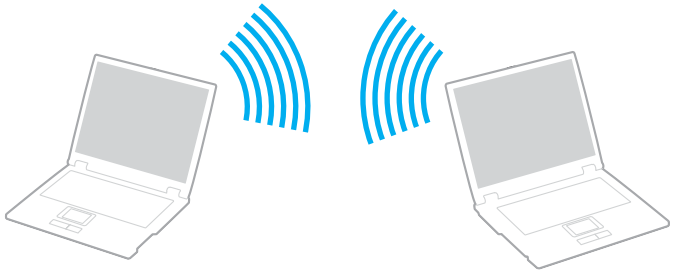
Wireless LAN devices using the IEEE 802.11a standard and the ones using the IEEE 802.11b or g standard cannot communicate because the frequencies are different. Wireless LAN devices using the IEEE 802.11g standard can only communicate with a device using the IEEE 802.11b standard, not with the IEEE 802.11a standard.

IEEE 802.11b: The standard speed is 11 Mbps, or about 30 to 100 times faster than a standard dial up.

IEEE 802.11g: The standard speed is 54 Mbps, or about 5 times faster than a Wireless LAN device using the IEEE 802.11b standard.

Communicating without Access Point (ad-hoc)

An ad-hoc network is a network in which a local network is created only by the wireless devices themselves, with no other central controller or Access Point. Each device communicates directly with other devices in the network. You can set up an ad-hoc network easily at home.



To communicate without Access Point (ad-hoc), proceed as follows:

1. Turn on the **Wireless** (on models with the Bluetooth functionality*) or **Wireless LAN** (on models without the Bluetooth functionality) switch.
   On models with the Bluetooth functionality, the **Wireless Device Switch** dialog box appears.
   Select the **Enable 2.4 GHz Wireless LAN** check box and deselect the **Enable Bluetooth Device** check box, then click the **OK** button.
2. Double-click the network icon on the taskbar displaying **Wireless Network Connection**.
   The **Wireless Network Connection** dialog box appears.
3. Click the **Change advanced settings** button.
   The **Wireless Network Connection Properties** dialog box appears.
4. Select the **Wireless Networks** tab.
5. Click the **Add…** button.
   The **Wireless network properties** dialog box appears.

6 Enter a **Network name (SSID)****.
You can choose a **32-digit** alphanumeric name.

7 Select **Open** from the **Network Authentication** drop-down box.

8 Select **WEP** from the **Data Encryption** drop-down box.

9 Deselect the **The key is provided for me automatically** option button.
Some information becomes visible.

10 Fill in the **Network key****.
The network key should be **5 or 13 alphanumeric characters** or **10 or 26 hexadecimal*** characters** long. You can choose whatever you want.

11 Fill in exactly the same **Network key** again, for confirmation.

12 Select the check box **This is a computer-to-computer (ad hoc) network; wireless access points are not used** at the bottom of the screen.

13 Click **OK**.
Your **Network name** appears in the **Preferred networks**.

14 Click **Advanced**.
The **Advanced** dialog box appears.

15 Select the **Computer-to-computer (ad hoc) networks only** option button.

16 Click **Close**.

17 Click **OK**.
Your computer is ready to communicate with another computer.

* See the printed **Specifications** sheet for more information.

** If you want to communicate between two or more computers, you need to configure all these computers the exact same way. This means that you need to enter the same **Network name** and the same **Network key** on all computers as on the first computer you configure.

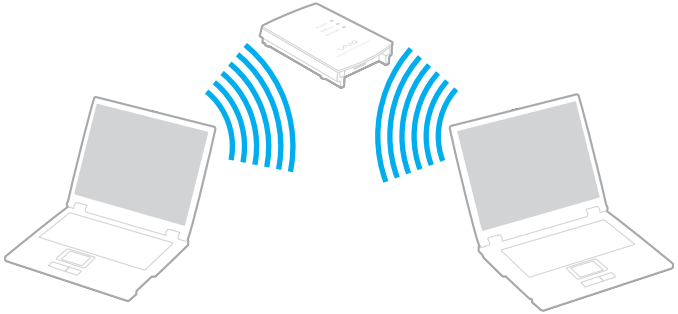
*** **Hexadecimal**: A number representation using the digits 0-9, with their usual meaning, plus the letters A-F (or a-f) to represent hexadecimal digits with values of (decimal) 10 to 15.

✍
An ad-hoc network does not support WPA.

!
In France, only certain channels are legally allowed when using WLAN outdoors. For more information, see the **Wireless LAN Regulations**.

Communicating with an Access Point (infrastructure)

An infrastructure network is a network that extends an existing wired local network to wireless devices by providing an Access Point, for example the **Sony Access Point**. The Access Point bridges the wireless and wired LAN and acts as a central controller for the Wireless LAN. The Access Point coordinates transmission and reception from multiple wireless devices within a specific range.



To communicate with an Access Point (infrastructure), proceed as follows:

1. Turn on the **Wireless** (on models with the Bluetooth functionality*) or **Wireless LAN** (on models without the Bluetooth functionality) switch.
   On models with the Bluetooth functionality, the **Wireless Device Switch** dialog box appears.
   Select the **Enable 2.4 GHz Wireless LAN** check box and deselect the **Enable Bluetooth Device** check box, then click the **OK** button.
2. Right-click the network icon on the taskbar displaying the **Wireless Network Connection** message.
3. Click **View Available Wireless Networks**.
   The **Wireless Network Connection** dialog box appears.
4. Select the network you want to use.

5 Type the **Network Key**.
If you are using the **Sony Access Point**, by default, you don't need to enter any encryption key (WEP/WPA). To be able to communicate, you must select the box **Allow me to connect to the selected wireless network, even though it is not secure**.

6 Click **Connect**.
After 30 seconds, the connection is established.

* See the printed **Specifications** sheet for more information.

For more information about setting up an access point, see the documentation supplied with your **Access Point**.

The WPA key needs to contain at least 8 characters.

Using the WiFi protected access (WPA)

WPA is a wireless security enhancement that allows you to transfer data in a highly secure way*.

* For more information on the access point, refer to the documentation that came with your access point.

To use WPA on your computer, proceed as follows:

1. Turn on the **Wireless** (on models with the Bluetooth functionality*) or **Wireless LAN** (on models without the Bluetooth functionality) switch.
   On models with the Bluetooth functionality, the **Wireless Device Switch** dialog box appears.
   Select the **Enable 2.4 GHz Wireless LAN** check box and deselect the **Enable Bluetooth Device** check box, then click the **OK** button.
2. Right-click the network icon on the taskbar displaying **Wireless Network Connection**.
3. Select **View available network connections**.
   The **Wireless Network Properties** dialog box appears.
4. Select the wireless network to which you want to connect.
5. Fill in the **Network key**.
   The network key should be at least 8 characters long. You can choose whatever you want.
6. Fill in exactly the same **Network key** again, for confirmation.
7. Click **Connect**.
   The connection is established.

* See the printed **Specifications** sheet for more information.

✍
In Ad-hoc mode, WPA security cannot be used (specifications in the standard itself).

!
In France, only certain channels are legally allowed when using WLAN outdoors. For more information, see the **Wireless LAN Regulations**.

Wireless LAN channel selection

In a 802.11b/g configuration, channel 1 to 13 can be used.

(a) With an access point ("Infrastructure")

- The channel used will be the channel selected by the access point.

  !
  For details on how to select the channel that will be used by the access point, refer to the documentation that came with your access point.

(b) Without access point ("Ad-Hoc")

- If the Wireless connection is initiated by the VAIO computer, channel 11 will be selected.

  !
  In France, only certain channels are legally allowed when using WLAN outdoors. For more information, see the **Wireless LAN Regulations**.

- If the Wireless connection is initiated by a peer Wireless LAN equipment, the Wireless LAN communication will make use of the channel selected by the peer Wireless LAN equipment.

  !
  The 2.4 GHz bandwidth used by wireless LAN compatible devices is also used by other various devices. Although technologies to minimize interference from other devices that uses the same bandwidth are employed on wireless LAN compatible devices, such interference may cause lower communication speed, narrower communication range, or broken wireless connections.

  The communication speed varies depending on the distance between communication devices, existence of obstacles between such devices, the device configuration, the radio conditions, and the software in use. In addition, communications may be cut off depending on the radio conditions.

  The communication range varies depending on the actual distance between communication devices, existence of obstacles between such devices, the radio conditions, the ambient environment that includes existence of walls and materials of such walls, and the software in use.

  Deploying IEEE 802.11b and IEEE 802.11g products on the same wireless network may reduce the communication speed due to radio interference. Taking this into consideration, the IEEE 802.11g products are designed to reduce the communication speed to ensure communications with IEEE 802.11b products. When the communication speed is not as fast as expected, changing the wireless channel on the access point may increase the communication speed.

Troubleshooting Wireless LAN

I cannot use the Wireless LAN functionality

Check if the **Wireless** (on models with the Bluetooth functionality*) or **Wireless LAN** (on models without the Bluetooth functionality) switch is turned on.

* See the printed **Specifications** sheet for more information.

The Wireless LAN Access Point and your computer cannot communicate

- Check if the **Wireless** switch is turned on.
- Check if the power of the Access Point is turned on.
- Check if the Access Point is displayed in the **Available networks** window.
  - To check this, click Start and then **Control Panel**.
  - Click **Network and Internet Connections**.
  - Click the **Network Connections** icon.
  - Right-click the **Wireless Network Connection** icon and select **Properties**.
  - Select the **Wireless Networks** tab.
  - Check if the Access Point is displayed in **Available networks**.
  - Connection availability is affected by distance and obstructions. You may need to move your computer away from obstructions or neared to any Access Point you may be using.

The data transfer speed is slow

- The maximum communication speed can vary depending on the obstacles or the distance between the communication devices, the radio waves, the operating system or the software you use. Remove the obstacle or make the distance between the Access Point and your machine smaller.
- It is possible that your Access Point communicates at the same time with another Access Point. Read the manual of the Access Point.
- If several computers communicate with the same Access Point, the concentration may be too high. Wait a few minutes and try to access again.
- If a Wireless LAN device using the IEEE 802.11g standard communicates with a device using the IEEE 802.11b standard, then it is normal that the speed reduces. Devices using the IEEE 802.11g standard are 5 times faster than the ones using the IEEE 802.11b standard.

I cannot access the Internet

- Check the settings of the Access Point. See the manual of the Access Point.
- Check if your computer and the Access Point are communicating.
- Make the distance between the Access Point and your machine smaller.

I cannot use a Wireless LAN network

Check if the **Wireless Zero Configuration** service is active.

To check the status of the **Wireless Zero Configuration service**, proceed as follows:

1. Click **Start** and then **Control Panel**.
   The **Control Panel** window appears.
2. Click the **Performance and Maintenance** icon.
3. Click the **Administrative Tools** icon.
4. Double-click the **Services** icon.
   The **Services** window appears.
5. Check **Status** and **Startup Type** for **Wireless Zero Configuration**.
   When **Started** and **Automatic** are shown under **Status** and **Startup Type**, respectively, the **Wireless Zero Configuration** service is active.

To activate the **Wireless Zero Configuration service**, proceed as follows:

1. On the **Services** window, right-click **Wireless Zero Configuration** and click **Properties**.
   The **Wireless Zero Configuration Properties** window appears.
2. Select **Automatic** for **Startup type** and click **Apply**.
3. Click **Start** under **Service status**.
4. Click **OK** to close the window.

Using power saving modes

When you use a battery as the source of power for your computer, you can take advantage of power management settings to conserve battery life. In addition to the normal operating mode, which allows you to turn off specific devices, your computer has two distinct power saving modes: **Standby** and **Hibernate**. When using battery power, you should be aware that the computer automatically enters **Hibernate** mode when the remaining battery charge becomes short, regardless of the power management setting you select.

If the battery level falls below 10 percent, you should either attach the AC adapter to recharge the battery or shut down your computer and insert a fully charged battery.

Using Normal mode

This is the normal state of your computer when it is in use. The green power indicator light is on in this mode. To save power while not working, you can turn off a specific device such as the LCD or the hard disk.

Using Standby mode

Standby mode turns off the LCD screen and sets the hard disk and the CPU to a low power consumption mode. The umber power light flashes in this mode.

To activate Standby mode, proceed as follows:

Go to **Start**/**Turn Off Computer** and click **Stand By**.

To return to **Normal** mode, press any key.

If you press the power button for more than four seconds, the computer will switch off automatically. You will lose any unsaved data.

When the computer is in **Standby** mode, you cannot insert a disc.

The computer comes out of **Standby** mode quicker than out of **Hibernate** mode.

Standby mode uses more power than **Hibernate** mode.

If the battery runs down when your computer enters **Standby** mode, you will lose any unsaved data. Going back to the previous work state is impossible. To avoid loss of data, you should save your data frequently.

If the computer is not used for 25 minutes, it will enter System Standby mode when running on AC power. When running on batteries, the computer also will enter **System Standby** mode after 25 minutes if unused. To avoid this, you can change the settings in the **Power Options Properties** screen (right-click the **power status** icon on the taskbar - select **Adjust Power Properties** - select the **Power Schemes** tab and change the settings in **Settings for VAIO optimized power scheme**).

Using Hibernate mode

The state of the system is saved on the hard disk and power is turned off. Even when the battery runs down, no data will be lost. The power indicator light is off in this mode.

To activate Hibernate mode, proceed as follows:

Press <**Fn**>+<**F12**>.

The **Hibernating** screen appears and the computer enters **Hibernate** mode.

Alternatively,

Click **Start**, and then **Turn Off Computer**.

In the **Turn off computer** screen, hold down the <**Shift**> key and click **Hibernate**.

To return to Normal mode, proceed as follows:

Turn on the computer by pressing the power button.

The computer returns to its previous state.

If you press the power button for more than four seconds, the computer will switch off automatically.

If you do not use the AC adapter for a long period of time, put your computer into **Hibernate** mode. This power saving mode saves you the time of shutting down in the normal way.

When the computer is in **Hibernate** mode, you cannot insert a disc.

Hibernate mode requires more time than **Standby** mode to be activated.

It takes more time to return to **Normal** mode from **Hibernate** mode than from **Standby** mode.

Hibernate mode uses less power than **Standby** mode.

Do not move the computer until its power indicator turns off.

Troubleshooting power management

The power management setting is not responding

Your computer's operating system may become unstable if a lower power state, such as **Hibernate** is initiated, and then changed before the computer completely enters the lower power state.

To restore the computer to its normal operating stability, proceed as follows:

1. Close all open applications.
2. Press <**Ctrl**>+<**Alt**>+<**Delete**> simultaneously and select **Restart** from the shut down menu drop-down list.
   The computer restarts.
3. If the procedure does not work, press and hold the power button for four seconds or longer to shut down the computer.

Managing power with VAIO Power Management

Power management helps you to set up power schemes of your computer that is running on AC power or batteries to suit your requirements for power consumption.

VAIO Power Management is a software application developed exclusively for VAIO computers. With this software application, you can enhance the Windows power management functions to ensure better operations of your computer and for longer battery life.

Activating VAIO Power Management

When you start the computer, a **power status** icon appears on the taskbar. This icon indicates what kind of power source you are using at that time, e.g., AC power. If you double-click this icon, the **Power Meter** screen appears showing you the power status.

VAIO Power Management functionalities are added to the Windows **Power Options Properties**.

To activate VAIO Power Management, proceed as follows:

1. Right-click the **power status** icon on the taskbar.
2. Select **Adjust Power Properties**.
   The **Power Options Properties** window appears.
3. Select the **VAIO Power Management** tab.

Activating VAIO Power Management power schemes

VAIO Power Management provides several predefined **power schemes**. Each power scheme consists of a group of power management settings that are designed to meet specific power management goals, ranging from maximum power management to no power management.

To activate a VAIO Power Management power scheme, proceed as follows:

1. Open **Adjust Power Properties**.
2. Select the **Power Schemes** tab.
3. Select a power scheme from the **Power schemes** drop-down list.
4. If you now select the **VAIO Power Management** tab, you see that the selected power scheme appears to the right of **Power Scheme**.
5. If necessary, you can change the items in the list, e.g., the brightness of the LCD.
6. Click **OK**.
   The power scheme has been activated.

You must have computer administrator rights on your computer to set up a power scheme.

For more information on **VAIO Power Management** and **Power Schemes**, see the software's online help files.

Power Scheme	*Description*
Power Management Off	Turns off all power management features such as Standby and Hibernate modes.
VAIO Optimized	The default power management state for either power source.
VAIO Maximum Battery	Provides power saving features to give you maximum battery life and good performance when battery power is in use. It reduces the brightness of the display and puts the system into **Standby** mode after a specified time period.
VAIO Ultimate Battery	Provides longer battery life than **VAIO Maximum Battery**.

If you have a computer with a mobile CPU (see the printed **Specifications** sheet), a CPU control icon may appear on the taskbar. The CPU control icon indicates the CPU control status (Performance, Adaptive, Battery Life). To make the icon appear, click the **Advanced** button on the **VAIO Power Management** tab. Select the **Show CPU status icon in the taskbar** box and then click **OK**.

If you want to know more about the CPU control icon, read the online help file (**Other Information** - **Icons on the Notification Area**).

Restoring the default settings

The power scheme settings that you changed on the **VAIO Power Management** tab can be restored to the default settings.

To restore the default settings, proceed as follows:

1. Select the **VAIO Power Management** tab in the **Power Options Properties** window.
2. Click the **Advanced** button.
   The **VAIO Power Management** window appears.
3. Click the **Reset by default** button.
   The **Confirm** window appears.
4. Select the **Restore all power schemes to the original factory default settings**.
5. Click **OK**.
   The **Confirm** window closes and the default settings are restored for all the power scheme options.

VAIO Power Management Viewer

To start VAIO Power Management Viewer, proceed as follows:

Click on the **VAIO Power Management** tab.

Alternatively, you can click **Start** > **All Programs** > **VAIO Control Center** > **VAIO Power Management Viewer** to start the viewer.

VAIO Power Management Viewer is provided with two tabs: **Running on batteries** and **Plugged in**. Starting the viewer automatically displays the tab appropriate to the current power scheme of your computer. On each tab, the radar chart shows performance with the current power scheme and the modified power scheme in the designated colours.

To change the power scheme, proceed as follows:

Select the desired power scheme from the drop-down list on VAIO Power Management Viewer.

To view performance with the power scheme modified with VAIO Power Management, proceed as follows:

When both VAIO Power Management and VAIO Power Management Viewer are running, VAIO Power Management Viewer shows performance with the power scheme that was modified with VAIO Power Management.

Use VAIO Power Management to set up or modify the power scheme.

Connecting peripheral devices

You can add functionality to your computer by using the various ports on your unit.

❑ **Connecting a port replicator (page 81)**
❑ **Connecting an external display (page 89)**
❑ **Selecting display modes (page 94)**
❑ **Using the Multiple Monitors function (page 97)**
❑ **Connecting external speakers (page 103)**
❑ **Connecting an external microphone (page 105)**
❑ **Connecting a Universal Serial Bus (USB) device (page 108)**
❑ **Connecting a printer (page 114)**
❑ **Connecting an i.LINK device (page 118)**
❑ **Connecting to a network (LAN) (page 122)**

✍
To identify and locate the ports on your computer, see the printed **Specifications** sheet.

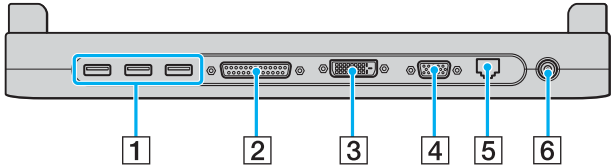
Sony computer supplies, accessories and peripherals can be purchased from your local retailer or from the Sony website: www.sonystyle-europe.com

For more information about connection compatibility, go to the VAIO-Link website: www.vaio-link.com

Connecting a port replicator

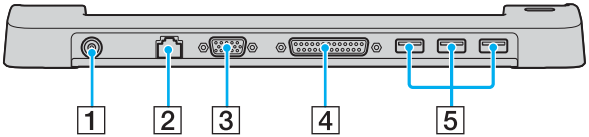
Your computer supports the use of an optional port replicator. Attaching a port replicator enables you to connect additional peripherals to your computer, such as a printer and an external display.

Port replicator for VGN-S series



1	3 Hi-Speed USB (USB2.0) connectors	(page 108)	2	Printer connector	(page 114)
3	DVI-D connector	(page 90)	4	Monitor/VGA connector	(page 90)
5	Network connector	(page 122)	6	DC In connector	(page 14)

Port replicator for VGN-T series



1	DC In connector	(page 14)	2	Network connector	(page 122)
3	Monitor/VGA connector	(page 90)	4	Printer connector	(page 114)
5	3 Hi-Speed USB (USB2.0) connectors	(page 108)			

!
Digital connection with the external display via the DVI-D connector is not supported.

The port replicator can be powered only with the AC adapter supplied with your computer. Do not remove the AC adapter from the port replicator or the AC outlet when using the port replicator; this may cause data damage or hardware malfunctions.

Attaching your computer to the port replicator

VGN-S series

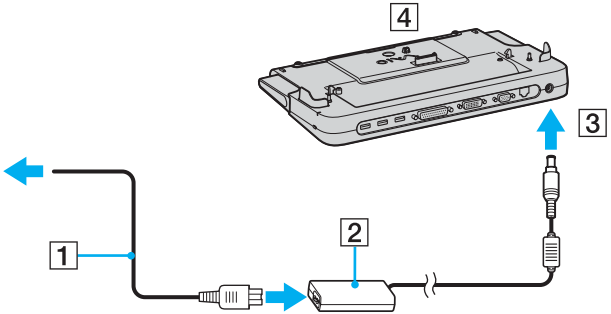
To attach your computer to the port replicator, proceed as follows:

1 Disconnect all peripherals from the computer.

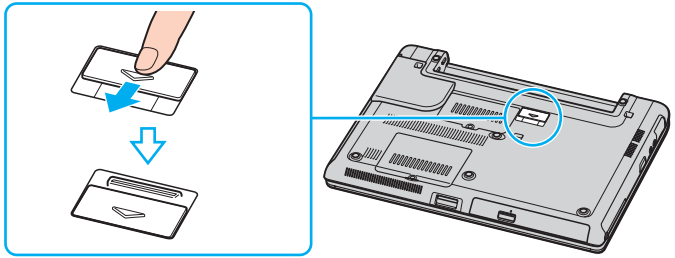
2 Plug the power cord (1) into the AC adapter and an AC outlet.

! Make sure to use the supplied AC adapter.

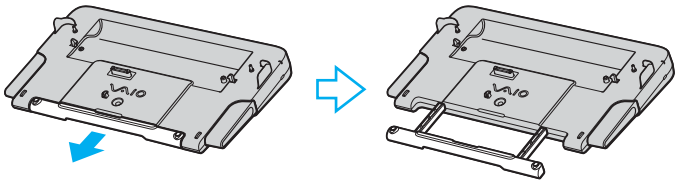
3 Plug the cable attached to the AC adapter (2) into the DC In port (3) on the port replicator (4).



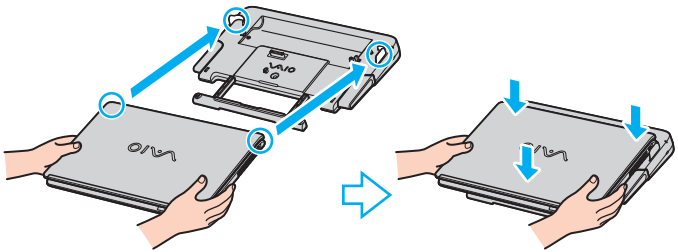
4 Slide open the port replicator cover on the bottom of your computer.



5 Slide out the front lever.



6 Align the bottom connector of the computer with the connector on the port replicator and push down until it clicks into place.



7 Turn on the computer.

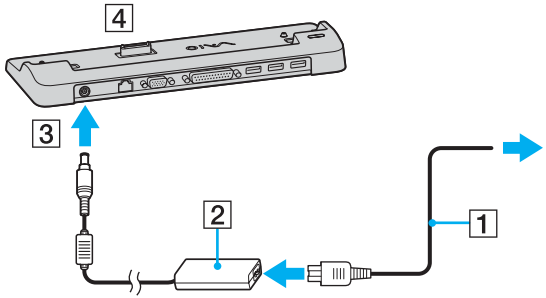
VGN-T series

To attach your computer to the port replicator, proceed as follows:

1 Disconnect all peripherals from the computer.

2 Plug the power cord (1) into the AC adapter and an AC outlet.

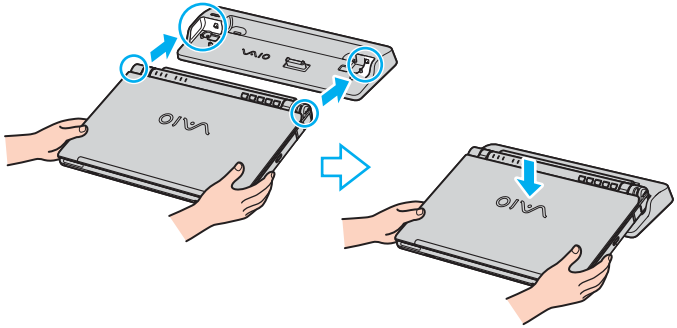
3 Plug the cable attached to the AC adapter (2) into the DC In port (3) on the port replicator (4).



4 Remove the cover from the port replicator connector on the bottom of your computer.

!
Your computer comes with the cover attached to the port replicator connector. When you remove the cover to use the port replicator, make sure to keep the cover at hand.

5 Align the bottom connector of the computer with the connector on the port replicator and push down until it clicks into place.



6 Turn on the computer.

Use the AC adapter that comes with your computer or the optional Sony adapter.

Do not move your computer while attached to the port replicator, as it may detach the port replicator and cause damage to the port replicator and the computer.

Disconnecting your computer from the port replicator

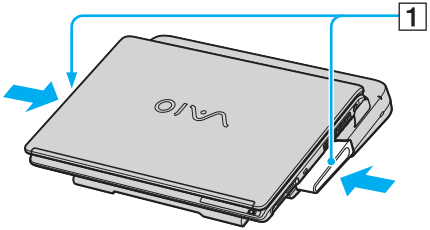
! Make sure to turn off your computer before disconnecting it from the port replicator to prevent loss of unsaved data.

VGN-S series

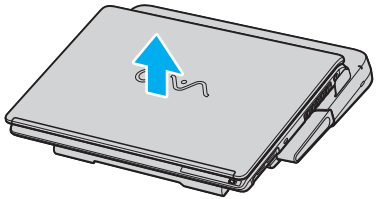
To disconnect your computer from the port replicator, proceed as follows:

1 Turn off the computer and the connected peripherals.

2 Push the release levers (1) at the same time.



3 Lift the computer away from the port replicator.



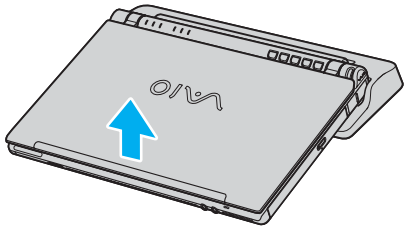
4 Close the port replicator connector cover on the bottom of your computer.

VGN-T series

To disconnect your computer from the port replicator, proceed as follows:

1 Turn off the computer and the connected peripherals.

2 Lift the computer away from the port replicator.



3 Replace the cover to the port replicator connector on the bottom of your computer.

It is extremely important to close the port replicator connector cover after disconnecting your computer from the port replicator. If the cover is left open, dust may get inside and damage the computer.

To disconnect your port replicator completely from the mains voltage, unplug the AC adapter.

When not using the port replicator for VGN-T series computers, make sure to keep the cover on the port replicator connector.

Connecting an external display

You can connect an external display to your VAIO computer. For example, you can use your computer with a computer display or a projector.

Connect the power cord after connecting all other cables.

Connected external displays are used as second screens.

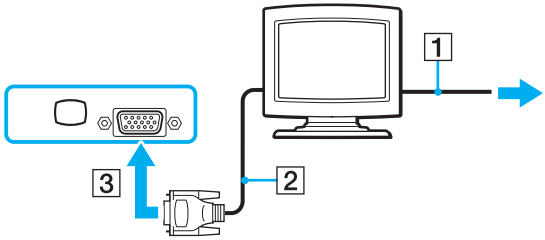
On Windows systems only, you can also use an external display to set up multiple monitors.

Connecting a computer display

You can connect a computer display (monitor) either directly to your computer or via the optional port replicator.

To connect a computer display, proceed as follows:

1. If necessary, plug one end of the display's power cord (1) into the display, and the other end into an AC outlet.
2. If you want to connect a VGA monitor, plug the display cable (2) (not supplied) into the monitor/VGA connector (3) on the computer or the port replicator.
3. If your computer is a VGN-S series computer and you want to connect a TFT/DVI monitor, plug the display cable (not supplied) into the DVI-D connector on the port replicator.



DVI-D stands for **Digital Visual Interface - Digital**. It is a kind of DVI connector that only supports digital video signals, so no analogue video signals. It has 24 pins.

A **DVI-I** connector (**Digital Visual Interface - Integrated**) supports digital video and analogue video signals. It has 29 pins.

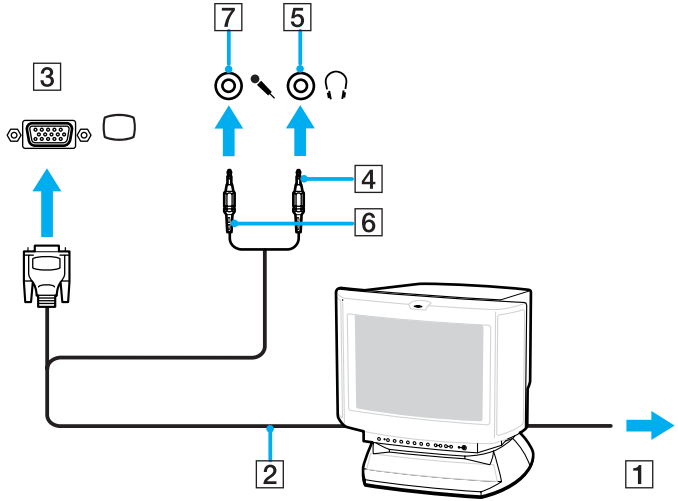
You can not connect a DVI-I to VGA cable to a DVI-D connector!

Connecting a multimedia computer display

You can connect a multimedia computer display that includes built-in speakers and a microphone either directly to your computer or via the optional port replicator.

To connect a multimedia computer display, proceed as follows:

1. Plug the power cord of the multimedia computer display (1) into an AC outlet.
2. Plug the display cable (2) (not supplied) into the monitor/VGA connector (3) on the computer or the port replicator.
3. Plug the speaker cable (4) into the headphone connector (5) on the computer.
4. Plug the microphone cable (6) into the microphone connector (7) on the computer.

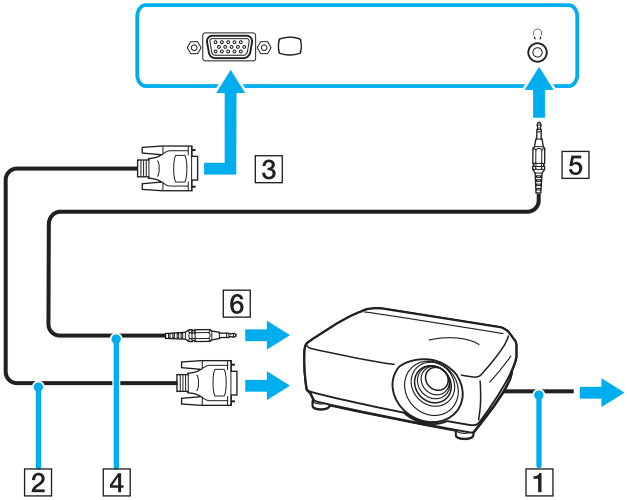


Connecting a projector

You can connect a projector (such as the Sony LCD projector) either directly to your computer or via the optional port replicator.

To connect a projector, proceed as follows:

1. Connect the power cord (1) of the projector into an AC outlet.
2. Plug the RGB signal cable (2) into the monitor/VGA connector (3) on the computer or the port replicator.
3. Plug the audio cable (4) (not supplied) into the earphone connector (5).
4. Plug the RGB signal cable and the audio cable into the connectors on the projector (6).



Troubleshooting external displays

I cannot use the Plug and Display function

Depending on the external display or the way it is connected, the Plug and Display function may not be available.
Use the shortcut key with the Fn key to select the output destination.

I cannot display contents on two or more displays at the same time

You cannot display contents on multiple external displays at the same time.
Select one of the external displays.

Selecting display modes

You can select which display to be used as the primary monitor when an external display (desktop monitor, etc.) is connected to the computer. The procedure for selecting a display, however, depends on the video controller used in your VAIO computer. See the printed **Specifications Sheet** for detailed information on the video controller.

By default, you can also toggle the display output between the LCD and external device with the S2 button or the DVD button, depending on your model. See **Setting up your computer with VAIO Control Center** **(page 23)** for more information.

If you want to work on your computer's LCD and the external display at the same time, see **Using the Multiple Monitors function** **(page 97)** for more information.

Models with the Intel video controller

To select a display, proceed as follows:

1. Click the **Start**, then **Control Panel**.
   The **Control Panel** appears.
2. Click **Appearance and Themes**, and then select **Display**.
   The **Display Properties** dialog box appears.
3. Click the **Settings** tab.
4. Click the **Advanced** button.
   The properties dialog box appears for advanced settings.
5. Click the tab with its name beginning with **Intel(R)**.
6. Click **Graphic Properties**.
7. On the **Devices** tab, click to select a display.
8. Click **OK**.

✍
You may not be able to display on the computer LCD screen and an external display or a projector at the same time, depending on the types of computer displays and projectors you are using.

Before turning on the computer, turn on the peripheral devices.

Models with the nVIDIA video controller

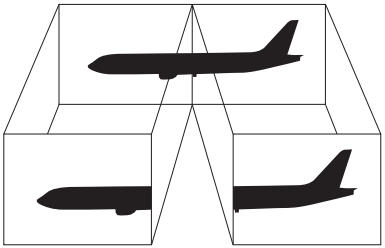
To select a display, proceed as follows:

1. Click the **Start**, then **Control Panel**.
   The **Control Panel** appears.
2. Click **Appearance and Themes**, and then select **Display**.
   The **Display Properties** dialog box appears.
3. Click the **Settings** tab.
4. Click the **Advanced** button.
   The properties dialog box appears for advanced settings.
5. Click the tab with its name beginning with **GeForce**.
   Select **nView Display Settings** from the left menu.
   To change the current display, select the desired display from the **Current display** drop-down list.
   To display the output on your computer's LCD and the external display at the same time, select **Clone** from the **nView Display mode** drop-down list.
   To specify displays, use the **Primary Display/Secondary Display** drop-down list.
6. Click **OK**.
   The **Confirm Display Settings** dialog box appears.
7. Click **YES**.

Using the Multiple Monitors function

The Multiple Monitors function allows you to distribute portions of your desktop across separate displays. For example, if you have an external display attached to the monitor/VGA connector, your computer's LCD and the external display can function as a single desktop.

You can move the cursor from one display to the other. This allows you to drag objects, such as an open application window or a toolbar, from one display to the other.



Your monitor hardware may not support the Multiple Monitors function.

Certain software applications may not be compatible with Multiple Monitors settings.

Make sure that your computer does not enter **Standby** or **Hibernate** mode while you are using Multiple Monitors mode, otherwise your computer may not return to **Normal** mode.

If you set different colours on each display, do not divide one single window on two displays, otherwise your software may not work properly.

Set fewer colours or a lower resolution for each display.

Selecting the Multiple Monitors mode

Models with the Intel video controller

To select the Multiple Monitors mode, proceed as follows:

1. Click the **Start** button on the **Windows** taskbar.
2. Click **Control Panel**.
3. Click **Appearance and Themes**.
4. Click the **Display** icon.
5. Select the **Settings** tab.
6. Click the **monitor** icon marked **2**.
7. Select the **Extend my Windows desktop onto this monitor** check box.
8. Click **Apply** and then **OK**.
   If the **Monitor Settings** dialog box appears, click **YES**.

Models with the nVIDIA video controller

To select the Multiple Monitors mode, proceed as follows:

1. Click the **Start** button on the **Windows** taskbar.
2. Click **Control Panel**.
3. Click **Appearance and Themes**.
4. Click the **Display** icon.
5. Select the **Settings** tab.
6. Click the **Advanced** button.
   The properties dialog box appears for advanced settings.
7. Click the tab with its name beginning with **GeForce**.
   Select **nView Display Settings** from the left menu.
8. Select **Dualview** from the **nView Display Mode** drop-down list.
9. Select **Laptop Display** from the **Primary display** drop-down list.
10. Click **OK**.

✍
Your external display may not support the Multiple Monitors function.

On VGN-S series, you can also select the Multiple Monitors mode just by pressing one of the **S** buttons if you have changed the button assignment to **Multiple Monitors** with **VAIO Control Center**. For details on changing the button assignment, **Setting up your computer with VAIO Control Center** **(page 23)**.

Setting the colours and resolution for each display

You can set the display colours and resolution for each display that is part of multiple monitors.

To set the display colours and resolution for each display, proceed as follows:

1. Click the **Start** button on the **Windows** taskbar.
2. Click **Control Panel**.
3. Click **Appearance and Themes**.
4. Click the **Display** icon.
5. Select the **Settings** tab.
6. Click the display you want to change (1 or 2).
7. Select an option from the **Color quality** list to change colours.
8. Use the slider in the **Screen resolution** to adjust the resolution.
9. Click **Apply** and then **OK**.
   If the **Monitor Settings** dialog box appears, click **YES**.

Customising the multiple monitors

You can customise the Multiple Monitors mode by changing the position of the two monitors comprising the multiple monitors.

To customize Multiple Monitors mode, proceed as follows:

1. Click the **Start** button on the **Windows** taskbar.
2. Click **Control Panel**.
3. Click **Appearance and Themes**.
4. Click the **Display** icon.
5. Click the **Settings** tab.
6. Drag the monitor icons to match the physical arrangement of your monitors. The two monitor icons must be connected to create multiple monitors.
7. Click **Apply** and then **OK**.
   If the **Monitor Settings** dialog box appears, click **YES**.

Deactivating the Multiple Monitors function

To deactivate the Multiple Monitors function, proceed as follows:

1. Click the **Start** button on the **Windows** taskbar.
2. Click **Control Panel**.
3. Click **Appearance and Themes**.
4. Click the **Display** icon.
5. Click the **Settings** tab.
6. Click the monitor icon **2**.
7. Deselect the **Extend my Windows desktop onto this monitor** check box.
8. Click **Apply** and then **OK**.
   If the **Monitor Settings** dialog box appears, click **YES**.

✍
For switching from Primary to Secondary display, see **Selecting display modes** **(page 94)**.

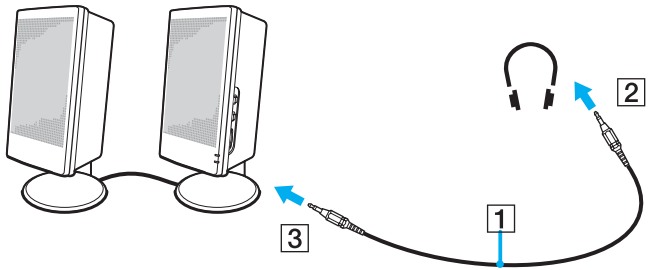
On VGN-S series, you can also select the Multiple Monitors mode just by pressing one of the **S** buttons if you have changed the button assignment to **Multiple Monitors** with **VAIO Control Center**. For details on changing the button assignment, **Setting up your computer with VAIO Control Center** **(page 23)**.

Connecting external speakers

You can enhance the sound quality of your computer by connecting external speakers.

To connect external speakers, proceed as follows:

1. Plug one end of a speaker cable (1) into the headphone connector (2) on the computer.
2. Plug the other end of the speaker cable to the external speakers (3).
3. Turn down the volume of the speakers before you turn them on.



Make sure your speakers are designed for computer use.

Do not place floppy disks on the speakers; their magnetic field may damage the data on the disks.

Troubleshooting sound

My speakers are not producing sound

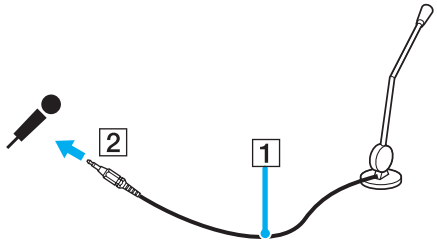
- **VGN-S series**
  - The built-in speakers may be turned off. Press <**Fn**>+<**F2**> or the **S1** button (default assignment) to turn on the speakers.
  - The speaker volume may be turned to the minimum. Press <**Fn**>+<**F4**> and then ↑ or → or keep pressing <**Fn**>+<**F4**> to increase the volume.
- **VGN-T series**
  - The built-in speakers may be turned off (the Mute indicator is on). Press the **Mute/SOUND EFFECT** button to turn on the speakers.
  - The speaker volume may be turned to the minimum. Press the **Volume up** button to increase the volume.
- If you use external speakers, check that the speakers are properly connected and the volume is turned up. If the speakers have a mute button, make sure it is off. If batteries power the speakers, check that the batteries are inserted properly and that they are charged.
- If you have connected an audio cable to the headphone connector, disconnect the cable.
- If your computer is powered by battery, check that the battery pack is properly installed and charged.
- If you are using an application that has its own volume control, check that the volume is turned up.
- Check the volume controls in Windows.

Connecting an external microphone

If you need to use a sound input device, for example to chat on the Internet, you need to plug in an external microphone.

To connect an external microphone, proceed as follows:

Plug the microphone cable (1) into the microphone connector (2) on the computer.



Make sure your microphone is designed for computer use.

Troubleshooting sound

My microphone does not work

If you are using an external microphone, check that the microphone is plugged into the microphone connector correctly.

My microphone volume is too high or too low

Proceed as follows to adjust the volume.

1. Click **Start** and then **Control Panel**.
   The **Control Panel** window appears.
2. Click **Sounds, Speech, and Audio Devices** and then **Sounds and Audio Devices**.
3. Click **Volume** under **Sound recording** on the **Audio** tab.
4. See if the **Select** check box for **Microphone Balance** is selected. If not, click the check box.
5. Move the slider up or down to adjust the volume.
6. If the volume is still too high or too low, select **Advanced Controls** from the **Options** menu.
   The **Advanced** button appears for **Microphone Balance**.
7. Click the **Advanced** button and select/deselect **Microphone Boost** or **+20db Gain** under **Other Controls** to adjust the volume.

Only left-channel audio is recorded with a monaural microphone (VGN-S series)

Proceed as follows to change the audio channel setting.

1. Click **Start** and then **Control Panel**.
   The **Control Panel** window appears.
2. Click **Sounds, Speech, and Audio Devices** and then **Sounds and Audio Devices**.
3. Click **Volume** under **Sound recording** on the **Audio** tab.
4. Select **Advanced Controls** from the **Options** menu.
   The **Advanced** button appears for **Microphone Balance**.
5. Click the **Advanced** button and select the **Mono Mic** check box under **Other Controls**.

! This audio channel setting is only applied to sound recording with a microphone.

Stereo sound is not recorded with a stereo microphone (VGN-S series)

Proceed as follows to change the audio channel setting.

1. Click **Start** and then **Control Panel**.
   The **Control Panel** window appears.
2. Click **Sounds, Speech, and Audio Devices** and then **Sounds and Audio Devices**.
3. Click **Volume** under **Sound recording** on the **Audio** tab.
4. Select **Advanced Controls** from the **Options** menu.
   The **Advanced** button appears for **Microphone Balance**.
5. Click the **Advanced** button and deselect the **Mono Mic** check box under **Other Controls**.

Connecting a Universal Serial Bus (USB) device

You can connect a USB device (for example, a mouse, floppy disk drive, keyboard, printer) to your computer.

USB devices are hot plug and play devices. You do not need to shut down your computer prior to connecting these devices unless the manual supplied with the device states otherwise.

For some USB devices you need to install the software before you connect the device. Not following this procedure might cause the device not to work properly. For more information, check the manual provided with the USB device.

When you are playing a DVD (video or audio) and you want to remove a USB device, such as USB-compatible speakers, make sure you stop the DVD first. Removing a USB-compatible device during DVD (video or audio) playback may cause a malfunction.

To prevent your computer and/or USB devices from damage, observe the following:

- When moving your computer with USB devices connected, avoid any shock or force to the Hi-Speed USB (USB2.0) connectors.
- Do not put your computer into a bag or carrying case when it has USB devices connected.

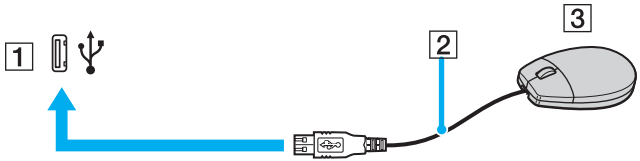
- **Connecting a USB mouse (page 109)**
- **Connecting a USB floppy disk drive (page 110)**

Connecting a USB mouse

To connect a USB mouse, proceed as follows:

1 Choose the USB connector (1) you prefer to use.

2 Plug the USB mouse cable (2) into the USB connector.
You can now use your USB mouse (3).



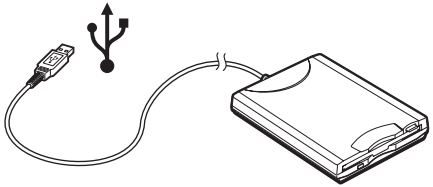
The VAIO USB mouse software driver is preinstalled on your computer, therefore, you only need to plug the USB mouse into the USB connector and you can start working.

Connecting a USB floppy disk drive

As an optional extra, you can purchase a USB floppy disk drive and connect it to your computer.

To connect a USB floppy disk drive, proceed as follows:

1. Choose the USB connector you prefer to use.
2. Plug the USB floppy disk drive cable into the USB connector. The VAIO logo on the disk drive should be facing up. Your USB floppy disk drive is now ready for use.



When using a USB floppy disk drive, do not apply force on the USB connector. This may cause a malfunction.

To remove a USB floppy disk drive, proceed as follows:

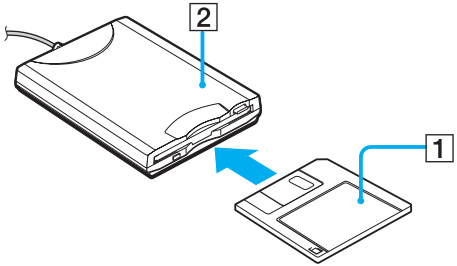
- If your computer is on, wait until the floppy drive LED indicator turns off and then unplug the USB cable. If the floppy disk drive is not removed properly, your system may crash and you may lose any unsaved data.
- If your computer is off, you can unplug the USB cable directly from the computer.

Inserting a floppy disk

To insert a floppy disk, proceed as follows:

1 Hold the disk (1) with the label side facing up.

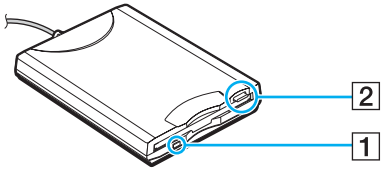
2 Gently push the disk into the drive (2) until it clicks into place.



Removing a floppy disk

To remove a floppy disk, proceed as follows:

When you have finished using the floppy disk, wait until the LED indicator (1) turns off and then press the eject button (2) to remove the disk.



Before pressing the eject button, make sure that the LED indicator is turned off.

If the disk does not come out by pressing the eject button, disconnect the floppy disk drive from the computer.

Do not press the eject button while the LED indicator is on. It may damage the floppy disk.

Troubleshooting floppy disks

My USB floppy disk drive cannot write to a floppy disk

- The floppy disk is write-protected. Disable the write-protect feature or use a floppy disk that is not write-protected.
- Check that the disk is properly inserted into the floppy disk drive.
- Your disk may be corrupt. Try to insert another floppy disk.

The optional USB floppy disk drive is not recognised as drive A

To set the floppy disk drive to A, proceed as follows:

1. Turn the system power on.
2. Connect the floppy disk drive.
3. Select **Control Panel** from the **Start** menu.
4. Click **Performance and Maintenance**.
5. Click **System**.
6. Select the **Hardware** tab, then click **Device Manager**.
7. Select **Universal Serial Bus controllers**, then **Y-E Data USB Floppy**.
8. From the Action menu, click **Uninstall**.
9. Keep clicking **OK** until the **Confirmation of deletion of device** message appears.
10. Select **Scan for hardware changes** from the **Action** menu.
    The floppy disk drive is recognised as drive A.

Connecting a printer

You can connect a Windows-compatible printer to your computer to print documents.

Connecting a printer using the USB connector

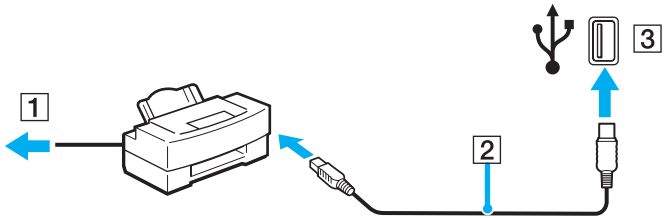
You can connect a USB printer compatible with your version of Windows to your computer.

To connect a printer using the USB connector, proceed as follows:

1 Plug the printer power cord into an AC outlet (1).

2 Choose the USB connector (3) you prefer to use.

3 Plug one end of a USB printer cable (2) into the USB connector and the other to your printer.

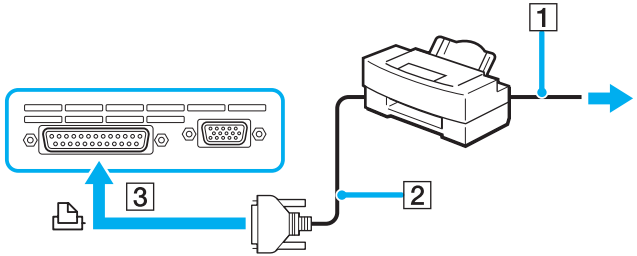


Connecting a printer using the printer connector

To connect a printer using the printer connector, proceed as follows:

1 Plug the printer power cord (1) into an AC outlet.

2 Plug the printer cable (2) supplied with your printer into the printer connector (3) on the computer or the optional port replicator.



Turn off your computer and the printer, unplug the AC adapter and the power cord before connecting the printer.

Troubleshooting printers

- Make sure that the printer driver supports Windows XP.
  Ask the manufacturer of your printer for the driver that supports Windows XP.
- The printer connector on the port replicator is internally connected to the USB. If your printer is connected to the printer connector on the port replicator, proceed as follows to check the printer port settings.

  1. Click **Start** and then **Control Panel**.
  2. Click the **Printers and Other Hardware** icon.
  3. Click the **Printers and Faxes** icon.
  4. Right-click the printer to select **Properties**.
  5. Click the **Ports** tab.
  6. Check if the check box for **USB001** is selected. If another check box is selected, click the box for **USB001**.
  7. Click **OK**.

  If the above procedure does not work, right-click the printer and selected "Delete" on the window in step 3 above to delete the printer. Then, install the printer driver once again.

- If the bidirectional communication functions are provided with your printer, disabling the functions on your computer may enable printing. Proceed as follows:
  1. Click **Start** and then **Control Panel**.
  2. Click the **Printers and Other Hardware** icon.
  3. Click the **Printers and Faxes** icon.
  4. Right-click the printer to select **Properties**.
  5. Click the **Ports** tab.
  6. Click the check box for **Enable bidirectional support** to deslect it.
  7. Click **OK**.

  ! This change to the settings will disable the bidirectional communication functions of your printer, such as data transfer, status monitoring, and remote panel.
- Check the physical connections between your computer and printer, the AC adapter and the power cord, and the power cord and an AC outlet, and then restart your computer.

Connecting an i.LINK device

Your computer includes an i.LINK (IEEE1394) connector, which you can use to connect to an i.LINK device such as a digital video camera recorder or to connect two VAIO computers in order to copy, delete or edit files.

The i.LINK connector of your computer does not supply power to external devices generally powered by i.LINK connectors.

The i.LINK connector supports transfer rates up to 400 Mbps; however, the actual transfer rate depends on the transfer rate of the external device.

The i.LINK features available may vary depending on the software applications you use. Refer to the documentation that came with your software for more information.

i.LINK cables compatible with your VAIO computer include cables with the following part numbers:

VMC-IL4415A (a 1.5 meter cable with a 4-pin connector at each end), VMC-IL4408 Series (a 0.8 meter cable with a 4-pin connector at each end).

- **Connecting a digital video camera recorder** **(page 119)**
- **Connecting two VAIO computers** **(page 120)**

An i.LINK connection with other compatible devices is not fully guaranteed.

The i.LINK connection varies depending on the software applications, operating system and i.LINK compatible devices you use. Refer to the documentation that came with your software for more information.

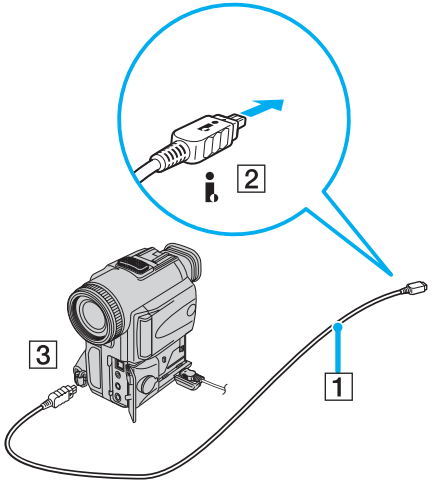
Check the working conditions and OS compatibility of i.LINK-compatible PC peripherals (HDD, CD-RW drive etc.) before you connect them to your computer.

Connecting a digital video camera recorder

To connect a digital video camera recorder, proceed as follows:

1 Plug one end of the i.LINK cable (1) into the i.LINK connector (2) of the computer and the other end into the DV In/Out connector (3) on the digital video camera recorder.

2 Launch **DVgate Plus**.



On Sony digital video cameras, connectors labelled **DV Out**, **DV In/Out** or **i.LINK** are i.LINK-compatible.

The Sony digital video camera recorder is an example; your digital video camera recorder may need to be connected differently.

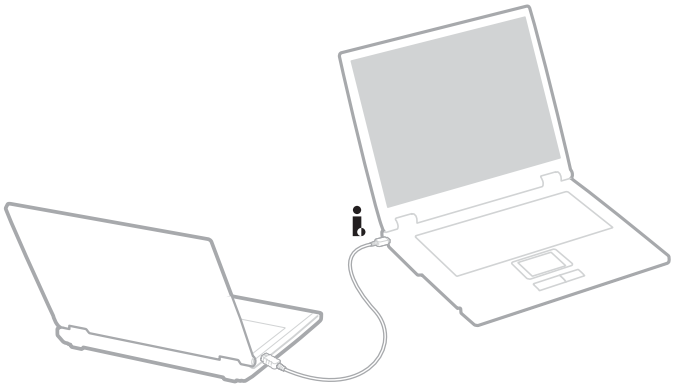
If your digital video camera recorder includes a Memory Stick slot, you can copy images from it to your computer via a Memory Stick. To do so, simply copy images on the Memory Stick, then use a special PC Card adapter to insert it into your computer.

You cannot access the pictures stored on a Memory Stick when using an i.LINK connection.

Connecting two VAIO computers

You can copy, edit or delete files on another VAIO computer to your computer with an optional i.LINK cable.

You can also print a document on a printer connected to another VAIO computer.



Troubleshooting i.LINK devices

I cannot establish an i.LINK connection between two VAIO computers

- You must have administrator rights on your computer to be able to link the two.
- Disconnect then reconnect the i.LINK cable.
- If you still have no connection after waiting for a while, restart both computers.
- If either computer has just returned from a power saving mode, the connection may be affected. In this case, make sure you perform a full restart before connecting them.

*When I record images to a digital video device using **DVgate Plus**, I see an error message*

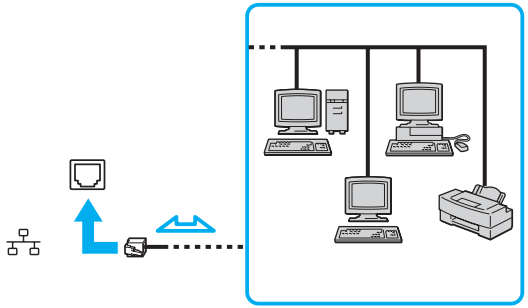
- Close all open applications and restart your computer. Frequent recording of images to a digital video device while using **DVgate Plus** sometimes causes this error.
- Your DV device will need to have DV In/Out in order to be able to transfer your files to the DV device.

I cannot use digital devices

- Check that the DV device is turned on and that the cables are properly connected.
- If you are using multiple i.LINK devices, the combination of the connected devices may cause unstable operation. If this is the case, turn off all connected devices and disconnect unused devices. Check the connection and then turn on the power again.
- You are strongly advised to use only Sony i.LINK cables, as using other brands may cause problems with the i.LINK devices.

Connecting to a network (LAN)

You can connect your computer to 10BASE-T/100BASE-TX/1000BASE-T-type networks* via an Ethernet network cable. For the detailed settings and devices needed to connect to the network, consult your Network Administrator.



The default settings make your computer able to connect to the network.

If the main unit is docked, you can only use the Ethernet network connector on the optional port replicator.

* Depending on your model. See the printed **Specifications** sheet for more information.

Telephone lines cannot be connected to the network (LAN) connector on your computer. If the network (LAN) connector is connected to the telephone lines mentioned below, high electric current to the connector may cause damage, overheating or fire.

- Home (intercom speakerphone) or business-use telephone lines (multi-line business telephone);
- Public telephone subscriber line;
- PBX (private branch exchange).

Do not plug a phone cable into your computer network jack.

Customising your computer

The following sections briefly describe how to change the main settings of your computer. Among other things, you will learn how to prepare your modem for use, how to use and customise the look of your Sony software and utilities, etc.

- **Setting up your language with Windows XP Professional (page 124)**
- **Configuring your modem (page 127)**
- **Setting a Sony wallpaper (page 129)**
- **Installing and updating applications (page 130)**
- **Managing drivers (page 135)**

Setting up your language with Windows XP Professional

Windows XP Professional computers are equipped with the **Multilingual User Interface (MUI)** feature. It allows you to change the English operating system, some software applications and the keyboard layout into the language of your choice: **French**, **German**, **Japanese**, **Dutch**, **Italian**, **Spanish**, **Czech**, **Finnish**, **Greek**, **Portuguese** and **Swedish**.

It is important that you select the correct keyboard settings during the Windows Setup.

To select the correct keyboard settings during Windows Setup, proceed as follows:

1. At first boot, click **Next**, then **Next** again in the **Windows XP Setup Wizard** window.
   The **Select Your System Settings** dialog box appears.
2. Fill in these three questions:
   - ❑ I live the closest to this region.
   - ❑ I type mostly in this language.
   - ❑ I use this type of keyboard.
3. In the **End User License Agreement**, accept the License Agreement and click **Next**.
4. Continue your Windows setup until it is finished.

You can also change the country and language settings into your language as soon as Windows has been restarted.

To change the country and language settings, proceed as follows:

1. Click **Start** and then **Control Panel**.
2. In the **Control Panel** window, double-click the **Regional and Language Options** icon.
   If you do not see this icon, click **Switch to Classic View** on the left side.
3. In the **Regional Options** tab of the **Regional and Language Options** window, select **your language** from the **Standards and formats** drop-down menu.

4 In the **Advanced** tab of the **Regional and Language Options** window, select **your language** from the **Language for non-Unicode programs** drop-down menu.

5 To change the language of the Windows menus, dialog boxes and online help files provided by Microsoft Windows, select the **Languages** tab of the **Regional and Language Options** window.

✍
Non-Microsoft Windows applications stay in English, even if you change these settings.

6 Select your language from the drop-down list.

7 Click **Apply** to apply the changes.
You are prompted to log off and log on again. Only then, the changes to the new language will take effect.

8 Click **Start**, and select **Log Off**.

9 Click **Log Off** in the **Log Off Windows** window. If necessary, enter your password to log on again. All the menus, help files and icons are then displayed in your selected language. However, some parts may remain in English.

To change the keyboard layout, proceed as follows:

1. Click **Start** and then **Control Panel**.
2. In the **Control Panel** window, double-click the **Regional and Language Options** icon.
   If you do not see this icon, click **Switch to Classic View** on the left side.
3. In the **Languages** tab of the **Regional and Language Options** window, click the **Details** button.
   The **Text Services and Input Languages** window appears.
4. In the **Settings** tab of the **Text Services and Input Languages** window, select your keyboard from the **Default input language** drop-down menu.
5. If your keyboard is not available, click the **Add** button.
   The **Add Input Language** window appears.
6. Select the input language and keyboard from the drop-down menu.
7. Click the **OK** button to close the **Add Input Language** window.
8. Click the **OK** button to close the **Regional and Language Options** window.

Configuring your modem

Before you can start using your internal modem (not all modem are built-in), or each time you use your modem while travelling, make sure that the country of the active location defined in the **Phone and Modem Options** dialog box matches the country you are dialling from.

You may notice a **Country Selector** tab under your current modem driver options. As the **Country Selector** tab is not a constant feature, do not use this tab to change the country settings. Only the following procedure is reliable.

To change your modem country settings, proceed as follows:

1. Click **Start** and then **Control Panel**.
2. Double-click **Phone and Modem Options**.
   The **Phone and Modem Options** dialog box appears.
   If you do not see the **Phone and Modem Options** dialog box, click **Switch to Classic View** on the left side.
3. Select your location on the **Dialing Rules** tab.
4. Click the **Edit** button to change the current configuration.
   The **Edit Location** dialog box appears.
   Or
   Click the **New** button to configure your modem.
   The **New Location** dialog box appears.
5. Check the country/region settings, and make sure it matches the place you are dialling from.

   ✍
   Pulse dial may not be supported in some counties and/or regions.
6. If you modified your location settings, click **Apply**, and then **OK**.
   The **Phone and Modem Options** dialog box appears.
7. Check that your modem is listed in the **Modems** tab.
   If your modem is not listed, click **Add** and follow the wizard.
8. Click **Apply/OK**. Your modem is configured.

   ✍
   Before applying new country settings, please make sure your phone line is disconnected from your VAIO computer.

Updating the modem driver

If you need to update the modem driver for any reason, proceed as follows:

1. Click the **Start** button and open **Control Panel**.
   The **Control Panel** window appears.
2. Click the **Printers and Other Hardware** icon.
   The **Printers and Other Hardware** window appears.
3. Click the **Phone and Modem Options** icon.
   The **Phone and Modem Options** dialog box appears.
4. Click the **Modems** tab and then click **Properties** to view the properties of your modem.
   The **Modem Properties** dialog box appears.
5. On the **Driver** tab, click **Update driver**.
   The **Hardware Update Wizard** window appears.
   Follow the instructions that appear on your screen. You can perform a Windows search for the driver, or point to the driver's location yourself.

Setting a Sony wallpaper

Your Sony VAIO computer offers you, among many other features, a choice of wallpapers.
You can change the wallpaper, the background of your desktop, as many times as you like. There are several VAIO-specific wallpapers to choose from.

To set another VAIO wallpaper, proceed as follows:

1. Go to **Control Panel,** click the **Appearance and Themes** icon and then the **Display** icon.
   The **Display Properties** dialog box appears.
2. Click the **Desktop** tab.
   A list of Windows and VAIO wallpapers is displayed.
3. Select a wallpaper from the **Background** list.
   You can see a preview of this wallpaper in the monitor above the **Background** list.
4. Adjust the position of the wallpaper with the **Position** drop-down list.
5. Click **Apply** when you have found the appropriate wallpaper.
6. Click **OK** to close the **Display Properties** dialog box.
   The wallpaper is applied to your computer.

A higher screen resolution reduces the size of items on your screen and increases the relative space on your desktop.

You may not be able to increase the screen resolution above a certain level. Your monitor and video adapters, for example, determine to which extent you can change the resolution.

Installing and updating applications

This section explains how to install, run or uninstall a software.
Furthermore, you will learn how to download the latest updates from our website.

❑ **Installing software (page 131)**
❑ **Changing or removing software (page 132)**
❑ **Caution (page 133)**
❑ **Downloading software (page 134)**

Installing software

To install bundled software from the supplied **Recovery Disc** or your hard disk drive, see the printed **Recovery Guide** for details. For software bundled with accessories, check first the installation procedure that comes with the accessory.

To install other software, use the following procedure.

Before installing the applications:

- Install and connect a hardware device, if necessary (see the **Managing drivers** **(page 135)** section);
- Close all open applications.

To install an application, proceed as follows:

1. Click **Start** and then **Control Panel**.
   The **Control Panel** window appears.
2. Click **Add or Remove Programs**.
   The **Add or Remove Programs** dialog box appears.
3. Click **Add New Programs**, and then click **CD or Floppy**.
   The **Install Program From Floppy Disk or CD-ROM** window appears.
4. Insert the first installation floppy disk or CD-ROM and click **Next**.
   The **Run Installation Program** appears.
5. For the rest of the procedure, follow the on-screen instructions.

When using **Add or Remove Programs**, you can only install programs that were written for Windows operating systems.

Changing or removing software

You can remove or change a software application any time you like. Before proceeding, close the application you want to change/remove.

To change or remove software, proceed as follows:

1 From the **Start** menu, click **Control Panel**.
The **Control Panel** window appears.

2 Click the **Add or Remove Programs** icon.
The **Add or Remove Programs** dialog box appears.

3 Select the software you want to change or remove.

- To change a program, click **Change/Remove** or **Change** and follow the on-screen instructions.
- To uninstall a program, click **Change/Remove** or **Remove**, then click **Next** followed by **OK**.
  If the **Locked file detected** dialog box appears, click **Reboot**. The computer restarts once uninstallation is completed and all previously used files are deleted.
  If the **Shared file detected** dialog box appears, it is recommended that you click **No** to keep shared files.
  Click **Close**.
  The software is uninstalled.

! When you click **Change or Remove**, some programs may be removed without any further warning. **Make sure you are certain you want to remove it beforehand.**

✍ You can sort programs by selecting different options in **Sort by**.

Add or Remove Programs will only remove programs that were written for Windows operating systems. For other programs, check the documentation to see if other files (such as .ini files) should be removed.

Caution

Windows File protection

Installing a program might overwrite shared system files such as **dynamic-link libraries** (DLL files)* and executable files (EXE files). When system files are overwritten, system performance becomes unpredictable, programs behave erratically, and the operating system can fail.

Never delete files with the following extensions: SYS, DLL, OCX, TTF, or FON.

In Windows XP, **Windows File Protection** prevents the replacement of protected system files such as SYS, DLL, OCX, TTF, FON, and EXE files. **Windows File Protection** runs in the background and protects all files installed by the **Windows Setup** program.

Windows File Protection detects attempts by other programs to replace or move a protected system file. It also checks the file's digital signature.

* This is an operating system feature that allows executable routines (generally serving a specific function or set of functions) to be stored separately as files with DLL extensions. These routines are loaded only when needed by the program that calls them.

File Signature verification

When you install a new application on your computer, you might overwrite system files and device driver files with unsigned or incompatible versions, which provokes system instability.

The system files and device driver files provided with Windows XP have a Microsoft digital signature, which indicates that the files are original, unaltered system files or that they have been approved by Microsoft for use with Windows.

Downloading software

Please note it is possible to download the latest upgrades of software for your computer from our website.

To download the latest upgrades, proceed as follows:

1 Go to www.vaio-link.com and choose your language.

2 Select **Drivers and Updates** and follow the procedure.

To install your application, see the **Installing software** **(page 131)** section.

Managing drivers

A driver is a software enabling you to use hardware devices. For example, in order for you to be able to use a printer, you must first install its driver. Many drivers, such as the mouse driver, come with the operating system.

This section explains how to install, check, update or uninstall a driver.
The Windows XP Rollback feature is also explained.
Finally, you will learn how to download the latest drivers from our site.

- **Installing a driver (page 136)**
- **Checking the driver's installation (page 138)**
- **Updating a driver (page 140)**
- **Uninstalling a driver (page 141)**
- **Restoring a driver (page 143)**
- **Downloading drivers (page 144)**

Installing a driver

For more information on (re)installing drivers, see the printed **Recovery Guide** for details.

To install a driver that is stored on the C: drive, proceed as follows:

1. Go to the folder **C:\Drivers**.
2. Select the correct folder.
   If you need to update a modem driver, for example, select the **Modem** folder.
3. If there is an .exe file, double-click the .exe file and follow the online procedure.
   If there is no .exe file, you need to go through the **Device Manager** to update the driver (see the second option in the **Updating a driver** **(page 140)** chapter).

If the driver comes on a CD-ROM or disc accompanying an accessory and the driver does not come with a specific installation procedure, proceed as follows to install it:

1. Insert the installation CD-ROM or disc accompanying the device into the optical disc drive.
2. Connect the device that needs a driver, to your computer.
   The **Found New Hardware Wizard** screen appears.
3. Select **Specify a location**, then click **Next**.
4. When installing a driver from the provided CD-ROM (or disc) by using a CD-ROM (or disc) drive connected to the computer, select the **Drivers** folder on the optical disc drive.
5. When installing a driver after having copied the contents of the provided CD-ROM (or disc) to your hard disk, browse to the appropriate subdirectory containing the driver. The subdirectory should be found in the folder you copied from the CD-ROM (or disc).
6. Click **OK** to begin the search procedure.
7. Click **Next** to install the driver.
   A new window appears when the driver has been installed.

8 Click **Finish**.
You may be asked to restart your machine.

9 Click **Yes**.
The driver is installed.

To install your device driver, you must log on to your computer as a user with administrator rights.

Checking the driver's installation

When the computer restarts, check that the device is working properly.

To check the driver's installation, proceed as follows:

1. From the **Start** menu, click **Control Panel**.
   The **Control Panel** window appears.
2. Click **Performance and Maintenance**.
3. Click the **System** icon.
   The **System Properties** dialog box appears.
4. Click the **Hardware** tab, then click **Device Manager**.
5. Double-click the option corresponding to the device you installed, then double-click your device.
   The **Properties** dialog box appears.
6. Make sure that the **This device is working properly** message is displayed under **Device status**.
7. Click **OK**.
   Close all the opened windows, your device is ready for use.

The device is not working properly in the following cases:

- Your device is shown in **Device Manager** with a yellow question or exclamation mark.
  Right-click your device and click **Uninstall**. Then repeat from step 2 in **Installing a driver** **(page 136)**.
- Double-clicking the category of your device in the device manager list does not display your device.
  You have to remove your device. See **Uninstalling a driver** **(page 141)** to remove it. Then repeat from step 2 in **Installing a driver** **(page 136)**.
- Double-clicking **Other devices** displays your device.
  You have to right-click your device, then click **Uninstall**. Repeat from step 2 in **Installing a driver** **(page 136)**.

- If the **This device is working properly** message is not displayed, the device is not working properly.
  Click **OK** to close the **Properties** dialog box, then reinstall the driver as follows:
  - Right-click **Uninstall**.
  - When the **Confirm Device Removal** dialog box appears, click **OK**.
  - Click **Yes** and restart the computer.
  - When the computer restarts, repeat from step 2 in **Installing a driver** **(page 136)**.
- If your device is not displayed in the **Properties** dialog box, the device is not working properly.
  Repeat steps 1 through 4 in the previous sections to check the driver's installation. Click your device, then click **Uninstall** to remove the driver. Click **Yes** to restart the computer. When the computer restarts, repeat from step 2 in **Uninstalling a driver** **(page 141)**.

Updating a driver

To update the driver, proceed as follows:

1. Click **Start** on the taskbar.
2. Click **Control Panel**.
3. Click the **Printers and Other Hardware** icon.
   And then click the device you want to revert.
4. On the **Hardware** tab, click **Properties**.
5. On the **Driver** tab, click **Update Driver**.
6. Follow the instructions that appear on your screen. You can have Windows search for the driver, or point to the driver's location yourself.

Or:

1. Click **Start** on the taskbar.
2. Click **My Computer** from the menu.
3. Click **View system information** on the left of the window.
4. Click the **Hardware** tab, then click **Device Manager**.
5. Double-click the option corresponding to the device you installed, then double-click your device.
   The **Properties** dialog box appears.
6. Click the **Driver** tab.
7. Click **Update driver**.
   The driver is updated.

✍
To install your device driver, you must log on to your computer as a user with administrator rights.

Uninstalling a driver

Leave the device connected to your computer while uninstalling the driver.

To uninstall the driver, proceed as follows:

1. Click **Start** on the taskbar.
2. Click **Control Panel**.
3. Click the **Printers and Other Hardware** icon.
   And then click the device you want to revert.
4. On the **Hardware** tab, click **Properties**.
5. On the **Driver** tab, click **Uninstall**.
6. When the **Confirm Device Removal** dialog box appears, click **OK**.
7. If you are prompted to restart your computer, click **Yes**.
   The **Uninstall** button is unavailable if removing the driver would make your device unusable.

Or:

1. Click **Start** on the taskbar.
2. Click **My Computer** from the menu.
3. Click **View system information** on the left of the window.
4. Click the **Hardware** tab, then click **Device Manager**.
5. Double-click the option corresponding to the device you installed, then double-click your device.
   The **Properties** dialog box appears.
6. Click the **Driver** tab.
7. Click **Uninstall**.

8 When the **Confirm Device Removal** dialog box appears, click **OK**.
The driver is uninstalled.

To uninstall your device driver, you must be logged on to your computer with administrator rights.

Restoring a driver

System Restore is a feature of Microsoft Windows XP that restores your computer to a previous state, if a problem occurs, without losing your personal data files.
System Restore monitors changes to the system, and it automatically creates easily identified restore points. These restore points allow you to revert the system to a previous time. They are created daily and at the time of significant system events (such as when an application or driver is installed).

To revert to your previous driver, proceed as follows:

1. Open the device that is not working correctly in **Control Panel**.
   To open the device:
   - ❑ Click **Start** on the taskbar.
   - ❑ Click **Control Panel**.
     The **Control Panel** window appears.
   - ❑ Click the **Printers and Other Hardware** icon.
   - ❑ And then click the device you want to revert.
2. On the **Hardware** tab, click **Properties**.
3. Click the **Driver** tab.
4. On the **Driver** tab, click **Roll Back Driver**.

Or:

1. Click **Start** on the taskbar.
2. Click **My Computer** from the menu.
3. Click **View system information** on the left of the window.
4. Click the **Hardware** tab, then click **Device Manager**.

5 Double-click the option corresponding to the device you installed, then double-click your device.
The **Properties** dialog box appears.

6 Click the **Driver** tab.

7 On the **Driver** tab, click **Roll Back Driver**.
You have your previous driver back.

✍
You must be logged on to your computer with administrator rights in order to complete this procedure.

Restoring your computer does not affect or change your personal data files.

For more information about System Restore, see the Windows **Help and Support Centre**.

Downloading drivers

Note that it is possible to download the latest versions of drivers for your computer on our website.

To download the latest drivers, proceed as follows:

1 Go to www.vaio-link.com and choose your language.

2 Select **Drivers and Updates** and follow the procedure.

For more information, follow the instructions you received with the device, or see the printed **Recovery Guide**.

✍
Downloading or installing drivers not provided by VAIO-Link might cause compatibility issues.

Upgrading your VAIO computer

Your computer and memory modules use high precision components and electronic connectors technology. To avoid the invalidation of your guarantee by mishandling, it is recommended that:

- You contact your dealer to install a new memory module.
- You do not install it yourself, if you are not familiar with upgrading memory on a computer.
- You do not touch the connectors or open the memory panel.

Contact VAIO-Link if you need assistance.

Adding and removing memory*

In the future you may want to change or add memory modules in order to expand the functionality of your computer. You can increase the memory by installing optional memory modules.

Be careful when changing memory. Mistakes on installation or removal of the memory module may cause a malfunction.

Only use memory modules that are compatible with your computer. If a memory module is not detected by your computer or Windows presents unstable operation, contact your sales dealer or the manufacturer of your memory module.

Electrostatic discharge can damage electronic components. Before touching a memory module, ensure the following:

- Handle the memory module gently.
- The procedures described in this document assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.
- Disconnect the system from its power source (that is, battery or AC adapter) and from any telecommunication links, networks, or modems before you open the system. Failure to do so may result in personal injury or equipment damage.

- Electrostatic Discharge (ESD) can damage memory modules and other components. Install the memory module only at an ESD workstation. If such a station is not available, do not work in a carpeted area, and do not handle materials that produce or hold static electricity (cellophane wrappers, for example). Ground yourself by maintaining contact with an unpainted metal portion of the chassis while performing the procedure.
- Do not open the memory module package until you are ready to change the module. The package protects the module from ESD.

!
Use the special bag delivered with the memory module or wrap the module in aluminium foil to protect it from electrostatic discharge.

Introducing any liquids or any foreign substances or objects into the memory slots, or other internal components of the computer, will result in damage to the computer and any repairs will be out of warranty.

!
Do not place the memory module in places subject to:

- Heat sources such as radiators or air ducts,
- Direct sunlight,
- Excessive dust,
- Mechanical vibration or shock,
- Strong magnets or speakers that are not magnetically shielded,
- Ambient temperature of more than 35ºC (95ºF) or less than 5ºC (41ºF),
- High humidity.

!
Handle the memory module with care. To avoid injuries to your hands and fingers, do not touch the edges of the components and circuit boards inside your computer.

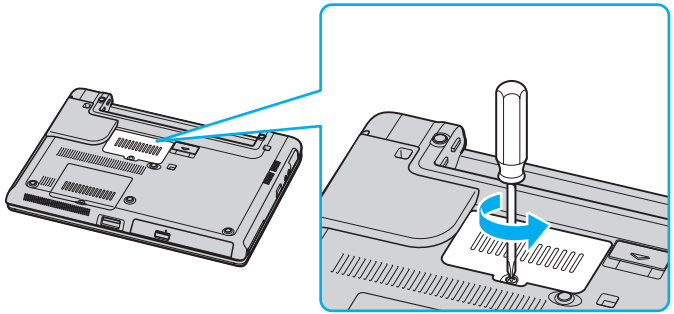
* Depending on the configuration of your computer, the number of available slots varies.

Removing and installing a memory module

VGN-S series

To change or add a memory module to the memory module slot on the bottom of the computer, proceed as follows:

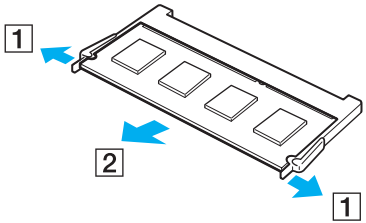
1. Shut down your computer and disconnect all peripheral devices.
2. Unplug the computer and remove the battery.
3. Wait until the computer cools down.
4. Unscrew the screw at the bottom of the computer.



5. Touch a metal object (such as the connector panel on the back of the computer) to discharge static electricity.

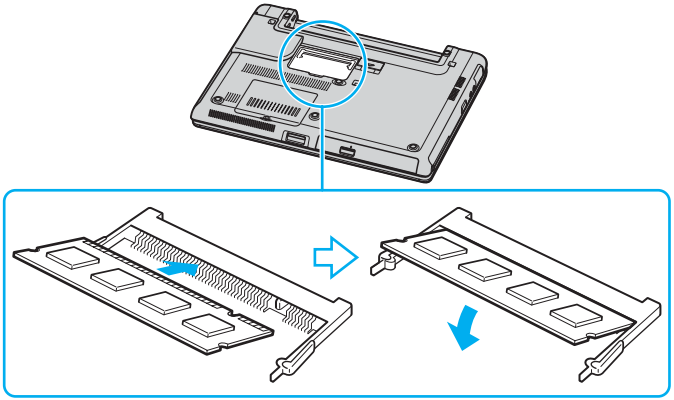
6 Remove the memory module:

- ❑ Pull the tabs in the direction of the arrows (1).
  The memory module is released.



- ❑ Make sure that the memory module tilts up and then pull it out in the direction of the arrow (2).

7 Slide the memory module into the memory module slot and push it in until it clicks into place.



! Do not touch any other components on the motherboard.

Make sure to insert the memory module edge with a notch into the memory module slot.

8 Close the module cover and then tighten the screws on the bottom of the computer.

9 Reinsert the battery and turn on the computer.

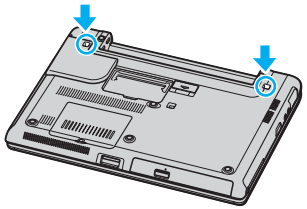
To change or add a memory module to the memory module underneath the keyboard, proceed as follows:

1 Shut down your computer and disconnect all peripheral devices.

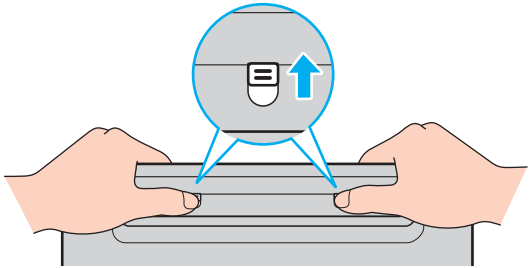
2 Unplug the computer and remove the battery pack.

3 Wait until the computer cools down.

4 Unscrew the two screws at the bottom of the computer.

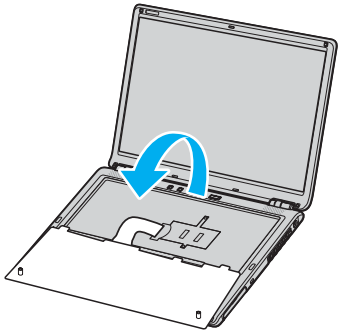


5 Slide up the latches in the battery compartment to unlock the keyboard.



6 Turn over the computer upside down and lift open the LCD.

7 Lift the keyboard from the LCD display side, turn it over the touchpad, and gently put it on the computer. Be careful not to detach the cable when lifting the keyboard.



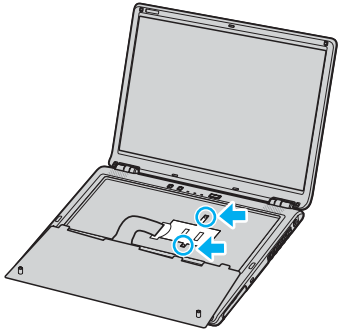
!

Observe the following when turning over the keyboard:

- Do not remove the keyboard forcibly, as it may deform the keyboard.
- Do not pull the keyboard cable with excessive force, as it may result in the broken cable.

Make sure not to disengage any key tops.

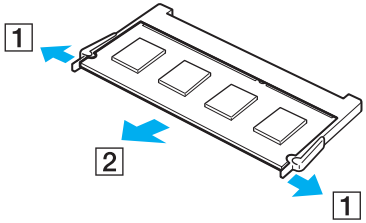
8 Unscrew the two screws next to the memory slot and remove the memory slot cover.



9 Touch a metal object (such as the connector panel on the back of the computer) to discharge static electricity.

10 Remove the memory module:

- ❑ Pull the tabs in the direction of the arrows (1).
  The memory module is released.

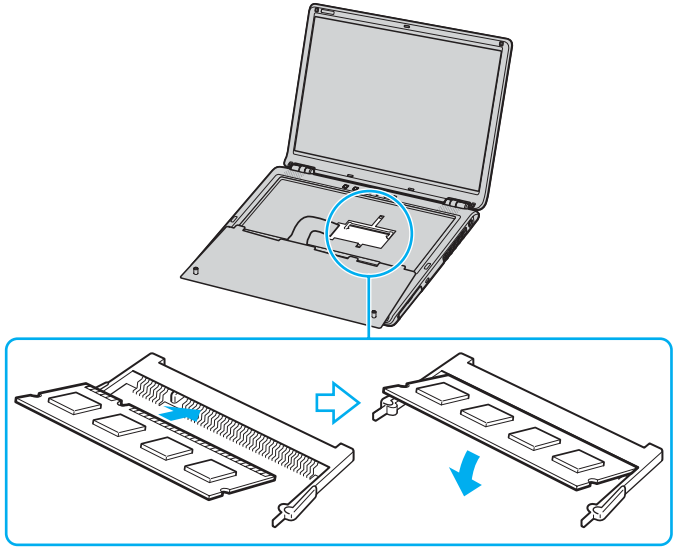


- ❑ Make sure that the memory module tilts up and then pull it out in the direction of the arrow (2).

11 Remove the new memory module from its packaging.

12 Install the memory module.

❑ Slide the memory module into the slot.



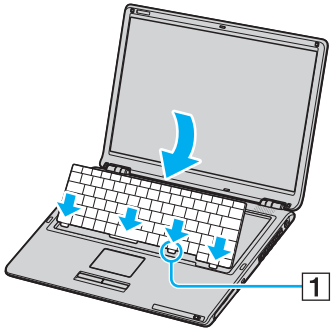
❑ Push in the memory module until it clicks into place.

!
Do not touch any other components on the motherboard.

Make sure to insert the memory module edge with a notch into the memory module slot.

13 Close the module cover and then tighten the screws.

14 Gently replace the keyboard and then press it into the computer.

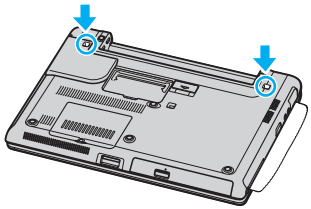


It would be easier to replace the keyboard if you gently hold down the area indicated by (1).

Observe the following when replacing the keyboard:

- Do not apply excessive force to the keyboard, as it may deform the keyboard.
- Do not pull the keyboard cable with excessive force, as it may result in the broken cable.

15 Close the LCD and then tighten the screws on the bottom of the computer.



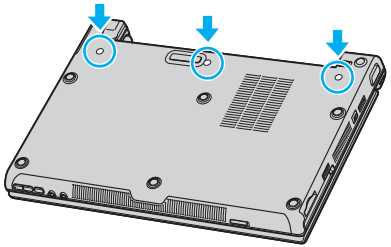
!
Make sure to put a soft cloth between the LCD and the keyboard to prevent damage to the LCD.

16 Reinstall the battery pack and turn on the computer.

VGN-T series

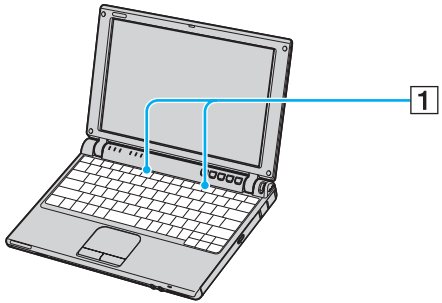
To change or add a memory module, proceed as follows:

1. Shut down your computer and disconnect all peripheral devices.
2. Unplug the computer and remove the battery.
3. Wait until the computer cools down.
4. Unscrew the three screws at the bottom of the computer.

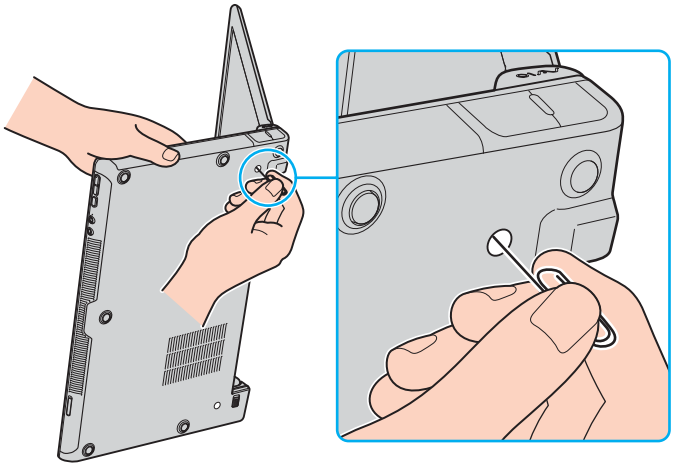


5. Turn over the computer and lift open the LCD.

6 Introduce a sharp object (such as a fine screwdriver) between the keys indicated on the picture (1) and push gently upwards.



If you find it difficult to lift the keyboard, insert a thin object (such as a paper clip) through the screw hole on the bottom of the computer, as illustrated below, to push up the keyboard.

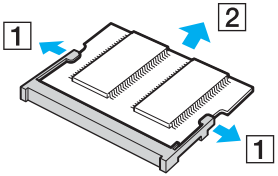


7 Lift the keyboard from the LCD display side, turn it over the touchpad, and gently put it on the computer. Be careful not to detach the cable when lifting the keyboard.

8 Touch a metal object (such as the connector panel on the back of the computer) to discharge static electricity.

9 Remove the memory module:

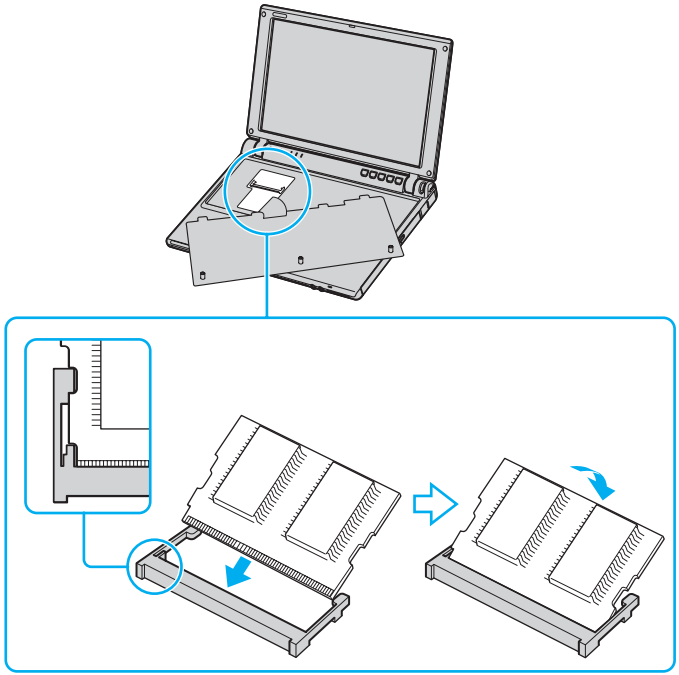
❑ Pull the tabs in the direction of the arrows (1).
The memory module is released.



❑ Make sure that the memory module tilts up and then pull it out in the direction of the arrow (2).

10 Remove the new memory module from its packaging.

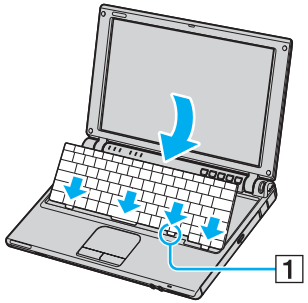
11 Slide the memory module into the memory module slot and push it in until it clicks into place.



!
Do not touch any other components on the motherboard.

Make sure to insert the memory module edge with a notch into the memory module slot.

12 Gently replace the keyboard and then press it into the computer.



It would be easier to replace the keyboard if you gently hold down the area indicated by (1).

13 Close the LCD and then tighten the screws on the bottom of the computer.

14 Reinsert the battery and turn on the computer.

Viewing the amount of memory

To view the amount of memory, proceed as follows:

1 Turn on the computer.

2 Go to **VAIO Control Center** via the **Start** menu.

3 Double-click the **System Information** folder in the **VAIO Control Center** window.

4 Double-click the **System Information** icon in the **System Information** folder.
You can view the amount of system memory. If the additional memory does not appear, repeat the whole procedure and restart the computer.

Getting help

This section describes how to get help and support if something goes wrong with your computer.

Sony offers you many support options for your computer.

Sony support options

See **Documentation pack** **(page 8)** for details on the printed and online documentation delivered with your computer, as well as further sources of reference.

Other sources of information

- Go to the online **help files** that accompany your software for instructions on using the software.
- **VAIO-Link website**: if you have any problem with your computer, you can access the VAIO-Link website for troubleshooting. Go to http://www.vaio-link.com.
- **e- Support**: This interactive part of our website http://www.vaio-link.com allows you to get in contact with our dedicated support team over the internet. Using a personalised account, you can log your technical queries with ease.
- **VAIO-Link help lines**: Before contacting VAIO-Link by telephone, try to solve the problem by reading the online and printed documentation.
- Visit the other Sony websites:
  - www.club-vaio.com if you want to know more about VAIO and become part of the growing VAIO community.
  - www.sonystyle-europe.com for online purchases.
  - www.sony.net for other Sony products.

✍
You need to set up an Internet connection before you can access the online features described here.

e-Support

What is e-Support?

You have searched our user guides and website (www.vaio-link.com) but have not found an answer to your question/issue? e-Support is the ideal solution for you!

Our e-Support Web Portal is an interactive website on which you can submit any technical query you may have regarding your VAIO and receive answers from our dedicated support team.

Every submitted query will result in a unique 'case number' to ensure smooth communication between yourself and the e-Support Team.

Who can use e-Support?

All registered VAIO customers are entitled to unlimited access to the VAIO-Link e-Support Web Portal.

How can I access the e-Support portal?

When you register your VAIO computer online at Club-VAIO (www.club-vaio.com), you will automatically receive an email with the link to the e-Support Web Portal, your Customer ID and some basic explanation a few hours later.

All you need to do is activate your account by clicking on the provided link in the email.

You are now ready to create your first case!

You can access the e-Support Web Portal from any computer with an active Internet connection.

A complete help file is available on the e-Support Web Portal to help you use our e-Support Service.

Can I submit questions in my native language?

Since you are interacting with our e-Support Team through a portal, which connects you directly to our central database, e-Support will only accept and deal with queries submitted in English.

Can I submit my questions at any time?

Yes, you can submit your questions 24/7, but please keep in mind that our e-Support Team can only treat your queries from Monday till Friday between 8am and 6pm.

Is there a cost involved for using e-Support?

No, this is a complete free of charge service offered to all registered VAIO customers!

How do I know when the e-Support Team has handled my query/case?

As soon as your case has been dealt with by our e-Support Team, you will receive an email, notifying you that your case has been updated.

Precautions

This section describes safety guidelines and precautions to help you protect your computer from potential damage.

Please contact VAIO-Link if you need assistance.

❑ **On handling the hard disk (page 166)**
❑ **On handling the LCD screen (page 167)**
❑ **On using the power source (page 168)**
❑ **On handling your computer (page 169)**
❑ **On handling floppy disks (page 170)**
❑ **On handling discs (page 171)**
❑ **On using the battery pack (page 172)**
❑ **On using headphones (page 172)**
❑ **On handling Memory Sticks (page 173)**

On handling the hard disk

The hard disk has a high storage density and reads or writes data in a short time. However, it can be easily damaged by mechanical vibration, shock or dust.

Although the hard disk has the internal safety device to prevent losing data due to mechanical vibration, shock or dust, you should be careful when handling your computer.

To avoid damaging your hard disk:

- Do not subject your computer to sudden movements.
- Keep the computer away from magnets.
- Do not place your computer in a location subject to mechanical vibration or in an unstable position.
- Do not move your computer while the power is on.
- Do not turn off the power or restart the computer while reading or writing data to disk.
- Do not use your computer in a place subject to extreme changes in temperature.

If the hard disk is damaged, the data cannot be restored.

On handling the LCD screen

- Do not leave the LCD facing the sun as it can damage the LCD. Be careful when using the computer near a window.
- Do not scratch the LCD or exert pressure on it. This could cause a malfunction.
- Using the computer in low temperature conditions may produce a residual image on the screen. This is not a malfunction. When the computer returns to normal temperature, the screen returns to normal.
- A residual image may appear on the screen if the same image is displayed for a lengthy period of time. The residual image disappears in a while. You can use a screensaver to prevent residual images.
- The screen becomes warm during operation. This is normal and does not indicate a malfunction.
- The LCD is manufactured using high-precision technology. You may, however, see tiny black points and/or bright points (red, blue, or green) that continuously appear on the LCD. This is a normal result of the manufacturing process and does not indicate a malfunction.
- Avoid rubbing the LCD screen, as this can damage the screen. Use a soft, dry cloth to wipe the LCD screen.

On using the power source

- See the printed **Specifications** sheet to check the power operation of your VAIO.
- Do not share the AC outlet with other power-consuming equipment, such as a photocopier or shredder.
- You can purchase a power strip with a surge protector. This device prevents damage to your computer caused by sudden power surges, in an electrical storm, for example.
- Do not place heavy objects on the power cord.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- Unplug your computer from the wall outlet if you are planning to not use the computer for a long time.
- Make sure that the socket outlet is easily accessible.
- When the AC adapter is not used, unplug it from the AC outlet.
- Use the AC adapter that comes with your computer or genuine Sony products. Do not use any other AC adapter as it may cause a malfunction.

On handling your computer

- Clean the cabinet with a soft cloth, which is either dry or lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent such as alcohol or benzine, as these may damage the finish of your computer.
- Should you drop a solid object or any liquid onto the computer, shut down your computer and then unplug it. You may want to have the computer checked by qualified personnel before operating it again.
- Do not drop the computer or place heavy objects on top of the computer.
- Do not place your computer in a location subject to:
  - Heat sources, such as radiators or air ducts,
  - Direct sunlight,
  - Excessive dust,
  - Moisture or rain,
  - Mechanical vibration or shock,
  - Strong magnets or speakers that are not magnetically shielded,
  - Ambient temperature of more than 35°C (95°F) or less than 5°C (41°F),
  - High humidity.
- Do not place electronic equipment near your computer. The electromagnetic field of your computer may cause a malfunction.
- Provide adequate air circulation to prevent internal heat from building up. Do not place your computer on porous surfaces such as rugs or blankets, or near material such as curtains or draperies that may block its ventilation slots.
- The computer uses high-frequency radio signals and may cause interference to radio or TV reception. Should this occur, relocate the computer a suitable distance away from the set.
- Use only specified peripheral equipment and interface cables; otherwise, problems may occur.
- Do not use cut or damaged connection cables.

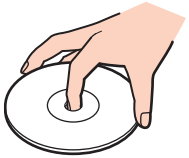
- If the computer is brought directly from a cold location to a warm one, moisture may condense inside your computer. In this case, allow at least one hour before turning on your computer. If any problems occur, unplug your computer and contact VAIO-Link.
- Make sure you disconnect the power cord before cleaning the computer.
- As you may lose important data once your computer is damaged, you should back up your data regularly. You can restore most of the original application programs from the supplied disc (see the printed **Recovery Guide** for details).

On handling floppy disks

- Do not open the shutter manually or touch the surface of the floppy disk.
- Keep floppy disks away from magnets.
- Keep floppy disks away from direct sunlight and other sources of heat.
- Keep the floppy disk away from any liquid. Do not let the floppy disk get wet. When you are not using the floppy disk, always remove it from the floppy disk drive and use a storage case.
- If the floppy disk comes with a label, make sure that the label is properly attached. If the edge of the label is curled up, the label may stick to the inside of the floppy disk drive and cause a malfunction or damage your floppy disk.

On handling discs

- Do not touch the surface of the disc.
- Do not drop or bend the disc.
- Fingerprints and dust on the surface of a disc may cause read errors. Always hold the disc by its edges and central hole, as shown:



- Proper care of the disc is essential to its continuous reliability. Do not use solvents such as benzine, thinning agents, commercially available cleaners or anti-static spray, as they may cause damage to the disc.
- For normal cleaning, hold the disc by its edge and use a soft cloth to wipe the surface from the centre out.
- If the disc is badly soiled, moisten a soft cloth with water, wring it out well, and use it to wipe the surface of the disc from the centre out. Wipe off any remaining moisture with a dry soft cloth.
- Never put stickers on discs. This will affect the use of the disc irreparably.

On using the battery pack

- Never leave the battery pack in temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Battery life is shorter in a cold environment. This is due to decreased battery efficiency at low temperatures.
- Charge the batteries at temperatures between 10°C to 30°C (18°F to 86°F). Lower temperatures require a longer charging time.
- While the battery is in use or being discharged, the battery pack heats up. This is normal and is not cause for concern.
- Keep the battery pack away from all sources of heat.
- Keep the battery pack dry.
- Do not open or try to disassemble the battery pack.
- Do not expose the battery pack to any mechanical shock.
- If you are not using the computer for an extended period of time, remove the battery pack from the computer to prevent damage to the battery.
- If, after fully charging the battery pack, the battery power is still low, the battery pack may be reaching the end of its life and should be replaced.
- You do not need to discharge the battery before recharging.
- If you have not used the battery pack for a considerable amount of time, recharge the battery.

On using headphones

- **Road safety** – Do not use headphones while driving, cycling, or operating any motorized vehicle. It may create a traffic hazard and is illegal in some areas. It can also be potentially dangerous to play loud music while walking, especially at pedestrian crossings.
- **Preventing hearing damage** – Avoid using headphones at high volume. Hearing experts advise against continuous, loud and extended play. If you experience a ringing in your ears, reduce the volume or discontinue use.

On handling Memory Sticks

- Do not touch the Memory Stick connector with your finger or metallic objects.
- Use only the label supplied with the Memory Stick as a label.
- Do not bend, drop, or apply strong shock to the Memory Stick.
- Do not disassemble or modify Memory Sticks.
- Do not let Memory Sticks get wet.
- Do not use or store Memory Sticks in a location subject to:
  - Extremely high temperatures, such as in a car parked in the sun,
  - Direct sunlight,
  - High humidity or,
  - Corrosive substances.
- Use the storage case supplied with the Memory Stick.

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Please see the printed Specifications sheet to see what software is available for your model.